NOVEMBER 29, 1941

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 6170 LONDON: SATURDAY, NOVEMBER 29, 1941 CCXLI

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ORIGINAL ARTICLES

High Stillbirth and Neonatal Mortalities. Prof. DUGALD BAIRD, M.D., F.R.C.O.G.; JOHN F. B. WYPER, M.B..... 657

Relationship of Exanthematic and Endemic Typhus. G. M. FINDLAY, M.D... 659

Radiological Visualisation of the Eustachian Tube. Squadron-Leaders G. F. REES-JONES, M.R.C.S., D.M.R.E., JOHN E. G. MCGIBBON, M.B., D.L.O. (*illus.*) 660

Brachial Neuritis occurring in Epidemic Form. R. WYBURN-MASON, M.R.C.P. 662

Resistance of Influenza Virus to Drying and its Demonstration on Dust. DERRICK G. FF. EDWARD, M.D..... 664

Continuous Administration of Ethyl Chloride. U. M. WESTELL, M.R.C.S., D.A..... 666

The Kondoléon Operation for Chronic Lymphœdema. Prof. E. D. TELFORD, F.R.C.S.; H. T. SIMMONS, F.R.C.S. 667

Further Experiences with Sulphapyridine in Filariasis. K. VIGORS EARLE, M.D., D.T.M..... 667

Biatrial Trilocular Heart with Atresia of the Mitral Valve. E. W. WALLS, M.B. (*illus.*) 668

MEDICAL SOCIETIES

ROYAL ACADEMY OF MEDICINE IN IRELAND: Placental Infarcts..... 670

LEADING ARTICLES

TYPHUS IMMUNISATION ... 671

INDUSTRY'S CLAIM ON MEDICINE 671

PHOTOGRAPHY THROUGH THE PERITONEOSCOPE... 672

ANNOTATIONS

Bacteria in Distilled Water 673

Catgut Sutures 673

Vaginal Examination during Labour 674

Why do Men make War?.. 674

Function of the Trigonal Muscle..... 675

Expectorants 675

Rubber Dermatitis 676

REVIEWS OF BOOKS

Psychoanalytical Method and the Doctrine of Freud. Roland Dalbiez 669

Tropical Tips for Troops. Lieut.-Colonel E. T. Burke, M.B..... 669

Modern Dermatology and Syphilology. Prof. S. William Becker, M.D., and Maximillian E. Obermayer, M.D..... 669

Year Book of Public Health, 1941. J. C. Geiger, M.D. 669

PUBLIC HEALTH

Damaged Food — Tuberculosis in Lancashire ... 683

Infectious Disease in England and Wales 683

IN ENGLAND NOW

A Running Commentary by Peripatetic Correspondents 678

LETTERS TO THE EDITOR

Hypertension (Dr. T. Izod Bennett) 684

Compressed Limb: Renal Failure (Mr. R. H. Paramore, F.R.C.S.)..... 684

Blast Injury of the Lungs (Drs. J. N. O'Reilly and S. Roodhouse Gloyne)... 684

A State Medical Service (Dr. Violet Russell)..... 684

Ligation of Patent Ductus Arteriosus (Dr. Geoffrey Bourne) 685

When to Tie the Cord (Dr. J. H. Moynihan)..... 685

Immunisation against Tetanus (Major-General H. Marrian Perry, F.R.C.P. and another) 685

Paradoxical Cerebral Embolism (Dr. C. P. Symonds) 686

Science or Art? (Dr. G. E. Donovan) 686

PARLIAMENT

On the Floor of the House 680

From the Press Gallery: Our Colonial Responsibilities—Agricultural Returns 681

Question Time: Health of the Nation—Increase of Tuberculosis among Women—Sale of Tuberculous Cows—Provision of School Meals—Wheatmeal Bread—Infection in Labour Camps—Sale of Horseflesh—Milk for the Elderly — American Doctors—National Medical Register—Home Guard Medical Officers—Medical Board Delays—Hospital Accommodation at Slough—Spectacles for the Troops—Medical Referee for Notts—Fifth Valuation of Approved Societies 681

SPECIAL ARTICLES

General Medical Council: Presidential Address.... 677

Flowering of a Health Service: Health and Medicine in the U.S.S.R. 677

Scotland: Education of Cripples—Death of Dr. F. M. Graham 678

American Unit at Work... 670

MEDICAL NEWS

Royal Society 686

Royal Society of Medicine. 686

Health Films in America.. 686

General Practitioners of West Ham 686

Hospital Saving Association 687

Naval Honours 687

Medical Honour 683

Harben Lectures 687

Pituitary Extracts 687

London Hospital 686

Dusting Powder for Babies 687

Communal Meals in Stirlingshire 687

Anglo-Soviet Medical Committee 687

Medical War Relief Fund . 676

Austin Motor Company .. 676

NOTICES

Nurses Consider their Profession 687

Tuberculosis in South America 687

To Defeat the Typhus-bearing Louse (*with diagram*)..... 688

Incidents and Gas..... 688

Liquemin Heparin..... 688

Births, Marriages and Deaths—Appointments . 688

THE LONDON AND COUNTIES
MEDICAL PROTECTION SOCIETY, Ltd.

President: SIR CUTHBERT S. WALLACE, K.C.M.G., C.B., F.R.C.S.

Members receive UNLIMITED INDEMNITY (subject to the Articles of Association) against damages and costs in cases undertaken on their behalf and advice and assistance in all matters of professional difficulty.

The estate of a deceased member is similarly protected.

Assets exceed £80,000

Annual Subscription £1

Entrance Fee 10s.

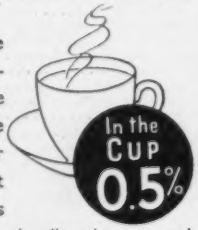
(REMITTED TO RECENTLY QUALIFIED PRACTITIONERS)

Full particulars and application form from :—

THE SECRETARY, VICTORY HOUSE, LEICESTER SQUARE, W.C.2. Gerrard 4553, 4814.

Wheat-starch conversion by BENGER'S FOOD

Benger's Food is a specially prepared wheaten powder containing adequate quantities of natural pancreatic enzymes of which the proteolytic enzyme known as trypsin and the starch converting amylases are of first importance. The wheaten powder serves two highly important functions (1) it acts as conveyor of these enzymes (2) in preparation of the Food by the admixture of hot milk it is converted into dextrins, dextri-maltoses and maltose.



When the hot milk meets the cold mixture the resulting temperature is correct for the enzyme action. Within two minutes the starch of the wheaten powder has been made soluble so that prepared Benger's Food contains only 0.5% of insoluble starch. As the digestion proceeds the trypsin modifies the milk protein so that when it comes in contact with the gastric juices, it separates into fine flocculi, as compared to the heavy tough curd formed by milk itself. Both actions take place whilst the Food is too hot to drink.

For Infants, Invalids and those suffering from severe digestive weakness, the time for pre-digesting Benger's Food should be extended to 15 minutes and upwards to 45 minutes. At the end of this period the wheaten powder is converted to dextrins, dextri-maltoses and maltose, and the milk proteins modified so that the finest possible curd is formed on contact with the gastric juices.

Sole Manufacturers: **BENGER'S LTD.**
Holmes Chapel, Cheshire, Eng.

The Benger Laboratories are always at the disposal of the medical profession in any of their dietetic problems. Physicians' samples of Benger's Food are always available.

"OXOID"

The word "OXOID" is the trade mark of OXO Ltd., and is used in connection with their therapeutical preparations both in tablet and fluid extract form.
ORGANO-THERAPEUTICAL PRODUCTS

OXO LABORATORY PREPARATIONS

HORMONES

OESTRIN	Indications: Menopause; Menstrual Irregularities; Uterine Inertia; Amenorrhœa; Pruritis Vulvæ; Suppression of Lactation. *Tablets: 1000 I.U. Ampoules: 1000-50000 I.U.*
STILBOESTROL	Indications: As for Oestrin. A highly potent œstrogenous substance for oral administration. *Tablets: 0.5 mg., 1.0 mg. and 5.0 mg. Ampoules: 1.0 mg. and 5.0 mg.*
"PITOXYLIN" (PITUITARY EXTRACT—POSTERIOR LOBE)	Licensed and standardised in accordance with the Therapeutic Substances Act. For the Induction of Labour; Uterine Inertia; Post Partum Hæmorrhage; Surgical Shock; Diabetes Insipidus. *Ampoules: 5, 10 and 20 I.U.*
ADRENALIN	Useful for the treatment of Asthma; Epistaxis; Tonsilitis; Hay Fever; Influenzal Crisis; Surgical Shock; etc. *Solution: 1 in 100 and 1 in 1000. Ampoules: 1 in 1000.*

Literature supplied on application.

OXO LIMITED, Thames House, London, E.C.4

★ OXO LABORATORY PREPARATIONS ★

CIVILIAN WAR RISKS

are normally covered

WITHOUT EXTRA CHARGE

under new

WITH-PROFIT POLICIES

effected with the

SCOTTISH WIDOWS' FUND

Head Office:
9 St. Andrew Square
Edinburgh, 2

MISSING PAGES ARE ADVERTISING PAGES.
THIS IS THE BEST COPY AVAILABLE FOR
PHOTOGRAPHY.

ORIGINAL ARTICLES

HIGH STILLBIRTH AND NEONATAL MORTALITIES

DUGALD BAIRD, M.D. GLASG., F.R.C.O.G.
REGIUS PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF ABERDEEN; OBSTETRICIAN-IN-CHIEF TO THE ABERDEEN MATERNITY HOSPITAL

JOHN F. B. WYPER, M.B. GLASG., B.SC.
RESIDENT REGISTRAR AT THE HOSPITAL

IN his book "Poverty and Population"[1] R. M. Titmuss quotes an estimate made by Dr. Enid Charles that if fertility remains at its present level the population of England and Wales will decline at the rate of 24% in each generation; so that on the basis of the 1931 census the number of children in 1945 will have decreased by 25%, and the number of people over 60 will have increased by 36%. Titmuss also quotes Glass who points out that in England and Wales there are great regional differences in fertility. The birth-rate of the south of England is much lower than that of the north and Wales. If the rates for the south-east had operated in the north and Wales during the decade ending 1936 our child population would have been reduced by about 250,000. Titmuss holds that it is illogical and inefficient to contemplate inducing people to have more children until we have judged the extent of contemporary waste in human life; for though it is only the higher fertility-rates in the north of England and Wales which are saving the country from a more rapid and disastrous decline in population, it is exactly in these areas that the infant mortality is highest. For example, in 1935 the infant mortality for Jarrow was 114 per 1000 live births as compared with 32 per 1000 for Coulsdon and Purley. Social conditions in Scotland are on the whole worse than in England, and there are similar variations in fertiiity so that the same conclusions can be drawn. The infant death-rate in Scotland in 1940 was 78 per 1000; for England and Wales it was 55 per 1000. It is obvious, therefore, that in Britain today many infants are dying who should not do so.

It has been recognised for some time now that the infant mortality is largely dependent on poverty and its resulting low standard of living. That neonatal mortality also depends on social conditions is suggested by the figures published by McNeil[2] who showed that in 1937 the neonatal mortality in Scotland was 38 per 1000, in the north of England 34 and the south-east 24. Comparing cities he showed that the rate for Glasgow was 43 per 1000, for Greater London 24, Chicago 25 and Amsterdam 16.

Less information is available about stillbirths; these were notifiable for the first time in Scotland in 1940, where the rate for that year was 42 per 1000 and for England and Wales 36 per 1000. Since most neonatal deaths are directly connected with pregnancy or child-birth, it is permissible to add them on to the stillbirths to get some idea of the number of children who reach the stage of viability and yet die as a result of some complication of pregnancy, labour or the puerperium. In Scotland during 1940 the figure was 80 per 1000 births; this seems a dangerously high figure, especially when taken in conjunction with the falling birth-rate.

Before one can give any opinion as to how the figure can be lowered it is important to study the actual causes of death in detail. This can only be done in hospital where records are detailed and an autopsy is usually carried out. With this end in view we have analysed the stillbirths and neonatal deaths occurring in the Aberdeen Maternity Hospital during the years 1938–40 inclusive. The cases were divided into booked cases and emergency cases.

MORTALITY IN BOOKED HOSPITAL CASES

There were 93 stillbirths (27·1 per 1000) among the 3427 booked cases. In 49 the child was mature and in 44 premature. Among the full-time cases there were two main groups. In the first group (19 cases) no adequate explanation could be found to explain the stillbirths; the fœtus died before the onset of labour or during the course of an easy labour, and in some of these a small tentorial tear was found with or without intracranial bleeding. In the second group (12 cases) trauma was the important factor and here the labour was difficult, owing to breech presentation, prolapse of the cord or uterine dysfunction; the death of the child was understandable, being due to asphyxia, shock or cerebral hæmorrhage. In the premature babies (44 cases) prematurity was the chief factor in bringing about the stillbirths. In some cases a pathological condition of the mother was present (pre-eclampsia in 6 cases, debility in 5, placenta prævia in 4, accidental hæmorrhage in 3) but in almost half of the cases (19) no explanation for the premature onset of labour could be found. The stillbirth figure of 27·1 per 1000 births seems high but compares favourably with the stillbirth-rate of 39 per 1000 for the city generally and 42 per 1000 for Scotland as a whole. In the present state of our knowledge the figure cannot be reduced substantially.

During the same period there were 94 neonatal deaths among booked cases (46 full-time and 48 premature)—a rate of 27·4 per 1000 births. Causes of death in the group of full-time babies were: infection 18, trauma 6, unknown 5, gross fœtal deformity 6, atelectasis 3, accidental hæmorrhage 1, placenta prævia 1, suffocation by overlying (after discharge from hospital) 3, miscellaneous 3. Among the 18 deaths due to infection, 16 occurred after discharge from hospital. As far as could be ascertained, 7 were due to pneumonia and 9 to gastro-enteritis. The 2 deaths in hospital were due to pneumonia. It appears, therefore, that the risk of infection in full-time babies in a well-run maternity hospital is much less than in the home. Of the 6 deaths from trauma, 3 followed difficult labour and might have been avoided if cæsarean section had been done; the other 3 followed fairly easy labour.

The factors responsible for the onset of premature labour in the cases where death was associated with prematurity were as follows: unknown 17, debility 7, pre-eclampsia 5, twin pregnancy 8, eclampsia 3, accidental hæmorrhage 1, placenta prævia 3, gross fœtal deformity 2, miscellaneous 2. The important factor here again is the unknown one. In 17 cases no reason could be detected by clinical means to explain why labour came on prematurely. The actual cause of death in these cases may have been cerebral hæmorrhage, atelectasis, pneumonia or gastro-enteritis, but it was felt that the important predisposing factor was the prematurity.

The neonatal mortality for the City of Aberdeen is 33 per 1000 and for booked cases in hospital 27·4 per 1000, but if the deaths due to infection after leaving hospital and overlying are removed the figure falls to 21·3 per 1000. Any substantial fall below this figure could only be effected by the prevention of premature labour; this problem will be discussed later.

MORTALITY IN EMERGENCY CASES

During the years 1938–40 there were 187 stillbirths in 616 emergency cases—83 in full-time deliveries and 104 in premature cases. In the full-time cases the most common cause of stillbirth was a mechanical factor—difficult labour and placenta prævia (41 cases or 50%). Many of the deaths in this group could have been avoided by earlier admission to hospital. Pre-eclampsia in the mother, in some cases followed by accidental hæmorrhage, accounted for 24 stillbirths. Some of the deaths in this group could have been avoided by better antenatal care and earlier admission to hospital with longer rest in bed. There were no other groups of importance.

As regards stillbirths in premature babies, the biggest factor was toxæmia in the mother (50 cases or almost 50%). The other categories were accidental hæmorrhage without toxæmia 11 cases, placenta prævia 15, cause unknown 12. In these groups fewer of the deaths are avoidable. In some of the cases of toxæmia better antenatal care would have saved the child's life, but many were probably unavoidable; they include cases where the mother made a poor response to treatment, fulminating cases, and others where intra-uterine death of the fœtus occurred even where the toxæmia was apparently mild and responding well to treatment.

1. London, 1938. 2. McNeil, C. *Lancet*, 1940, 1, 912.

There must, therefore, be a large wastage in the toxæmia group until more is known about the ætiology of eclampsia. The deaths from placenta prævia are unavoidable.

Of the neonatal deaths in emergency cases, 24 occurred in full-time babies. The causes of death here were: trauma 15, unknown 2, placenta prævia 1, infection 1, gross fœtal deformity 3, miscellaneous 2. In most of these cases of trauma the death was due to cerebral hæmorrhage following difficult labour, and without doubt some of the deaths could have been avoided if the mothers had been sent into hospital earlier in labour. Deaths occurred in 55 premature babies and the causes of the premature onset of labour were: unknown 10, toxæmia 8, accidental hæmorrhage 9, twin pregnancy 5, placenta prævia 8, debility 2, gross fœtal deformity 2, miscellaneous 11.

DISCUSSION

Booked cases.—In order to assess the wastage of child life from obstetrical causes it is convenient to consider the stillbirth and neonatal death-rates together. In the Aberdeen Maternity Hospital during the years 1938–40, out of 3427 booked cases there were 187 stillbirths or neonatal deaths; this rate of 54·5 per 1000 is much less than the figure of 69·8 per 1000 for the city as a whole. Discounting the Maternity Hospital booked cases, the figure for obstetric practice for the rest of the city—that is to say, domiciliary midwifery and emergency cases sent to hospital—is about 78·5 per 1000, which compares very unfavourably with the figure of 54·5 per 1000 for the hospital booked cases.

Among full-time babies (95 cases) the cause of death was unknown in 25·3% of cases; trauma accounted for 18·9%, infection for 18·9% and gross fœtal deformity for 8·3%. A few of the deaths from trauma might be avoided. The deaths from infection occurred after the children had gone home and are thus at present unavoidable, so that the main scope for improvement is in the large group where no adequate explanation exists to account for the death.

Most of the premature babies (92 cases) who die succumb within 24 hours of birth because they are so feeble. The cause of the premature onset of labour was: unknown in 37%, toxæmia in 15·2%, debility in 13%, twin pregnancy in 8·7%, placenta prævia 7·6%, gross

TABLE I—RESULTS OF TREATMENT OF 352 PREMATURE BABIES IN THE ABERDEEN MATERNITY HOSPITAL, DURING 1938, 1939 AND 1940

Weight at birth (lb.)	5½–5	5–4½	4½–4	4–3½	3½–3	Under 3
Infants	142	75	55	32	23	25
Deaths	7	6	22	16	14	24
Death-rate per 1000	49	80	400	500	643	960

fœtal deformity in 5·5%, miscellaneous in 13%. The more highly skilled the care bestowed on them, of course, the more chance these infants have of survival, but even with the best care many of them die. Table I shows that where the child weighs more than 4½ lb. at birth the chance of survival is good, but that with children under this weight the mortality rises abruptly. An analysis of the neonatal deaths in premature babies in hospital shows that in a series of 89 cases, 76 were under 4½ lb. and of these 59 lived less than 24 hours. The problem therefore involves more than improved pædiatrics.

Emergency cases.—As far as the analysis of the deaths in emergency cases is concerned different conclusions must be drawn. Out of a total of 266 stillbirths and neonatal deaths in this group, 107 occurred in full-time babies and the biggest individual factor here was trauma (41%), followed by toxæmia 12%, accidental hæmorrhage 16%, and placenta prævia 12%. Trauma, placenta prævia and toxæmia together account for 65% of the deaths and most of these could be avoided by better obstetrics. A big reduction could be achieved by checking the blood-pressure regularly, avoiding the use of forceps till the head is low in the pelvis, and by sending all cases of antepartum hæmorrhage to hospital as soon as there is any bleeding.

TABLE II—ANALYSIS OF 250 CASES SEEN IN SPECIALIST PRACTICE, 708 BOOKED CASES SEEN IN NURSING-HOME PRACTICE AND 3427 BOOKED CASES SEEN IN HOSPITAL

Parity of mother	Full-time cases		Premature cases		Pregnancies ending prematurely (%)	Death-rate per 1000 births
	Infants	Stillbirths and neonatal deaths	Infants	Stillbirths and neonatal deaths		
SPECIALIST PRACTICE						
1	136	1	3	0	..	..
2	61	1	1	0	..	..
3	30	1	1	0	..	..
4	13	0	0	0	..	..
5 and over	5	0	0	0	..	..
	245	3	5	0	..	..
NURSING-HOME PRACTICE						
1	404	11	43	18	9·6	64
2	164	4	5	2	3	35
3	63	1	3	0	4·5	16
4	21	2	0	0	..	..
5 and over	5	1	0	0	..	..
	657	19 (28·6/1000)	51	20 (400/1000)	..	..
HOSPITAL PRACTICE						
1	1137	39	117	34	9·3	58
2	723	17	65	19	8·3	44
3	431	14	41	13	8·7	57
4	238	8	22	5	8·4	50
5 and over	597	17	56	21	8·6	60
	3126	95 (30/1000)	301	92 (306/1000)	..	..

In the 159 deaths from prematurity among emergency cases the cause of the premature labour was: toxæmia 26%, accidental hæmorrhage 25% (more than half of these also had toxæmia), placenta prævia 14·5%, unknown 13·5%. About a third of all the cases of premature labour were due to pre-eclampsia or pre-eclampsia complicated by accidental hæmorrhage; in more than half of these the antenatal care was poor. In cases of accidental hæmorrhage without toxæmia, cases of placenta prævia and cases where the cause of the onset of labour is unknown (62 cases or 39% of the total), little can be done in the present state of our knowledge.

As far as the emergency cases are concerned there is great scope for improvement in both antenatal and intranatal care, which would result in the saving of many children. Among booked cases only slight improvement in the infant death-rate can be looked for by improvement in treatment along the present lines. The big factors are the toxæmias (the ætiology of which is understood so little), unexplained death and unexplained premature labour.

Biochemical studies in metabolism would be valuable in the investigation of this problem, but we have not found it possible to undertake such investigations under present conditions. We have, however, tried to find out whether there is any relationship between poverty and the high incidence of prematurity and stillbirths of unknown origin. For this purpose we have compared booked cases in the maternity hospital with those of nursing-home and specialist practice. Unfortunately, the numbers of the two latter groups are small and conclusions must be accepted with reserve.

The figures for specialist practice (table II) show 3 deaths in 250 deliveries (12 per 1000). The deaths were due to: anencephaly, melæna neonatorum, and cerebral hæmorrhage following spontaneous delivery. There were only 5 premature labours, all due to pre-eclampsia, and no deaths among them.

An analysis of nursing-home cases (table II), shows two points of interest. First, there were a few deaths in full-time babies; these were mostly due to cerebral hæmorrhage following difficult labour (for example, breech presentation or forceps delivery in vertex cases). Secondly, a number of deaths occurred from prematurity, generally the result of pre-eclampsia (13 out of 18 of the infantile deaths in primiparæ). The incidence of prematurity was much greater in first than in later pregnancies; 9·6% of all babies in primiparæ were premature

and only 3% in a second pregnancy. This in itself raises the fœtal death-rate in the first pregnancies, since, as the table shows, the fœtal death-rate in premature babies is much higher than in full-time babies. The total infant death-rate, including stillbirths and neonatal deaths, was 55 per 1000 births.

Among the hospital booked cases (table II) the mortality for full-time babies was also much lower than for premature babies (30 per 1000 against 306 per 1000). In contrast to the nursing-home figures, the proportion of premature labours to the total did not fall off after the first pregnancy, and because of this the death-rate among the babies remained almost the same in each parity. Whereas the main cause of fatal prematurity in nursing-home practice was pre-eclampsia, in hospital the largest group came under the heading of "cause unknown" (37% of the total).

The cause of death among full-time babies in booked hospital cases was undetermined in by far the biggest group, in contrast to the nursing-home cases or the emergency hospital cases where the commonest cause of death was trauma following difficult labour. The almost complete absence of the "unexplained" factor as a cause of death in nursing-home and specialist practice and the difference in the incidence of premature labour points to the importance of economic factors, the most important of which would be deficiency in diet and lack of adequate rest among the poor. Attendance at a hospital antenatal clinic and delivery under the best conditions in hospital will accomplish a great deal for these people. In Aberdeen the comparative figures show that they can reduce the wastage of life due to both stillbirth and neonatal mortality from 78·5 to 54·5 per 1000; in fact, if these figures are corrected for babies dying of infection after dismissal from hospital, the relative figures are 81·7 and 48·4. These measures, however, cannot neutralise the effects of faulty diet and poor home conditions. The figure of 12 per 1000 for specialist practice shows what can be accomplished where these adverse factors do not operate. In this last group, the patients had not only good nursing and medical attention but good home conditions with the advantages of better education and sound nutrition. The figures encourage the hope that when the living conditions of the poor resemble in their essential details those of the more prosperous section of the community a big saving in child life will result.

The numbers presented here are far too small for any conclusions to be drawn with confidence, but they call for a similar analysis on a large scale. Should the conclusions be substantiated they are doubly important in war-time when living conditions deteriorate and diet may become deficient. In peace-time, first-class proteins and the protective foods were too expensive to be used in sufficient quantity by the poor. Since the outbreak of war the Government, by such measures as the milk scheme, has done something to remedy this evil; but since there is a shortage of first-class proteins and protective foods diets are likely to remain deficient. It is important to see that extra foodstuffs are given in the first instance to those who need them most—expectant mothers and all growing children. The most efficient and economical method of doing this is by a widespread extension of communal dinners. The expectant mother would thus be assured of one meal daily which would contain all the substances thought to be necessary for the wellbeing of her child. She would have a much needed respite from cooking and washing-up, and there would be ample opportunity for practical education in the principles of good nutrition.

SUMMARY

The causes of stillbirth and neonatal deaths in the Aberdeen Maternity Hospital have been analysed. In 3427 booked cases where the baby was full-time there was no adequate explanation of the death in 25·3% of the total; trauma accounted for 18·9% and fœtal deformity for 8·3%. There were few deaths from infection in hospital.

Among the premature births no adequate explanation of the reason for the premature onset of labour could be found in 37%; toxæmia accounted for 15·2%. The death-rate was largely determined by the degree of prematurity.

The combined stillbirths and neonatal deaths in private specialist practice, in hospital practice and domiciliary practice were found to be 12 per 1000, 54·5 per 1000 and 78·5 per 1000. The low figure in the first group is probably due to a combination of favourable factors—economic, nursing and medical. In the second group the nursing and medical factors are favourable but economic conditions are unfavourable. In the third group the high figure indicates the need for an all-round improvement in medical and nursing care as well as economic conditions.

There is thus a large wastage of child life (approximately 80 per 1000 births) associated with childbirth in Scotland, intimately connected with unfavourable economic conditions, and malnutrition and fatigue in the mother. If investigations on a large scale substantiate these findings, then measures to ensure proper feeding and care of pregnant women are urgently needed.

RELATIONSHIP OF EXANTHEMATIC AND ENDEMIC TYPHUS

G. M. FINDLAY, C.B.E., M.D., D.SC. EDIN.

(Wellcome Bureau of Scientific Research, London)

IT has long been recognised that an attack of endemic typhus protects against infection with exanthematic typhus and vice versa, but the exact relationship between exanthematic and endemic typhus has remained obscure. The usual suggestion is that endemic typhus is the more primitive form, the exanthematic typhus rickettsiæ resulting as a modification from continued passage through the human host and the human body louse (cf. Castaneda 1940). There may exist intermediate strains between those that do and those that do not cause inflammation of the tunica vaginalis of the guineapig (Castaneda and Silva 1939). Earlier efforts to demonstrate an antigenic relationship in animals were however not very successful. Zinsser and Castaneda (1930, 1933), Varela, Parada and Ramos (1932) and Mooser and Sparrow (1933) either completely failed to show any immunity or found only a partial immunity when guineapigs immunised with killed endemic typhus rickettsiæ were subsequently inoculated with exanthematic rickettsiæ. The antigens used by all these workers were, however, comparatively weak, being prepared from the peritoneal washings of rats treated with benzol and then infected with endemic typhus. Veintemillas (1939), using a more concentrated antigen prepared from irradiated rats and, giving multiple injections, protected all of his test animals against an exanthematic strain of typhus rickettsia isolated in Mexico. With still richer antigens prepared from the lungs of mice and rats more striking evidence of cross-immunity between endemic and exanthematic typhus has been obtained in guineapigs.

Finlayson and Grobler (1940), using a vaccine prepared in Castaneda's laboratory from an endemic typhus strain isolated in Mexico, reported that they were able to protect guineapigs against infection by both endemic and epidemic virus from South Africa. A single injection of 1 c.cm. was sufficient to protect against endemic strains, whereas two injections of 1 c.cm. were required to protect against exanthematic strains. Later Finlayson (1940) found that when the vaccine was concentrated to half its original volume by precipitation with alum guineapigs were protected against the exanthematic strain by a single injection of 1 c.cm. Analogous results have been reported by Castaneda (1941) using a murine lung vaccine from an orchitic strain L, isolated in Mexico, as an antigen against the Breinl strain of exanthematic typhus. Of 11 guineapigs given three injections of 1 c.cm., 8 were completely protected and 3 partially protected; of 11 guineapigs given two injections, the total amount per animal varying from 0·5 to 2 c.cm., 6 were protected and 5 partially protected; of 5 guineapigs given one injection of 1 c.cm., 2 were partially protected and 3 were unprotected. It would thus seem that in guineapigs the degree of immunity bears a relationship to the amount of antigen injected. The question whether a similar relationship holds good in man is uncertain.

AN EXPERIMENT IN MAN

Although a considerable number of human beings have been inoculated with rickettsiæ in an effort to produce immunity against typhus very little is known about the efficacy of these various forms of vaccination. The following unrehearsed experiment may therefore be worth placing on record.

In January, 1940, G. M. F., aged 47, was given three injections of Weigl's louse vaccine containing killed exanthematic typhus rickettsiæ: no reaction occurred but there was no positive Weil-Felix reaction and no rickettsicidal power could be shown in the serum by the intradermal test in rabbits devised by Giroud (1938). During April, 1940, four injections of 1 c.cm. of a mouse-lung vaccine, prepared by Durand and Giroud (1940), were given at intervals of five days; the vaccine again contained killed exanthematic typhus rickettsiæ. There was no local or general reaction but subsequently the serum was shown to contain rickettsicidal immune bodies by the intradermal test in rabbits against exanthematic typhus. During the next six weeks experiments were carried out on the intranasal instillation into mice of both exanthematic and endemic typhus rickettsiæ. In June G. M. F. developed a febrile reaction lasting five days with maximum temperature 101° F. and for the first two days considerable frontal and postocular headache. A very few discrete roseolar spots were seen on the abdomen and side of the chest. On the second day of fever blood was injected into rats and guineapigs. An orchitis-producing strain of typhus rickettsia was isolated. There were no complications and it was possible to return to work within a fortnight.

A week before G. M. F.'s illness, a laboratory technician, aged 18, had gone sick with headache and fever. He had received one injection of 1 c.cm. of the mouse-lung vaccine containing killed exanthematic typhus rickettsiæ. Three days after receiving the injection he complained of slight headache with no rise in temperature and two days later was given a second injection of 1 c.cm. of the same mouse-lung vaccine. Twenty-four hours later his morning temperature was 100·2° F. He developed fever which continued for a fortnight, maximum 103·8° F., associated with headache, photophobia and a transitory rash. On the third day of fever blood was injected into rats and guineapigs. An orchitic strain of rickettsia was obtained from the blood.

From both cases a strain of endemic typhus rickettsia was thus obtained but the disease was far more severe in the technician than in G. M. F. The same batch of vaccine was subsequently inoculated into 12 other persons not actively engaged in typhus investigations without causing any febrile reaction, and when injected into guineapigs it also failed to produce fever. In both the cases here recorded the infection was therefore contracted during work with active endemic typhus rickettsiæ, being apparently modified in the first case by the presence of some degree of immunity against exanthematic typhus, despite the fact that typhus is usually more severe over the age of 40. This unrehearsed human experiment therefore bears out the contention that there is a close antigenic similarity between rickettsiæ of exanthematic and endemic typhus.

CONCLUSION

In two cases of endemic typhus infection was contracted in the laboratory. In one the infection was apparently modified by previous immunisation with killed exanthematic typhus rickettsiæ, thus confirming observations in guineapigs which suggest that the relationship between the rickettsiæ of exanthematic and endemic typhus is quantitative rather than qualitative.

REFERENCES

Castaneda, M. R. (1940) Profilaxis especifica del tifo exantematico, Mexico.
— (1941) *Brit. J. exp. Path.* **22**, 167.
— and Silva, R. (1939) *Publ. Hlth Rep. Wash.* **54**, 1337.
Durand, P. and Giroud, P. (1940) *Arch. Inst. Pasteur Tunis*, **29**, 234.
Finlayson, M. H. (1940) *Sth Afr. med. J.* **14**, 247.
— and Grobler, J. M. (1940) *Ibid*, **14**, 129.
Giroud, P. (1939) *C.R. Soc. Biol., Paris*, **127**, 397.
Mooser, H. and Sparrow, H. (1933) *Arch. Inst. Pasteur Tunis*, **21**, 1.
Varela, G., Parada, M. A. and Ramos, V. (1932) *Proc. Soc. exp. Biol., N.Y.* **30**, 206.
Veintemillas, F. (1939) *J. Immunol.* **36**, 339.
Zinsser, H. and Castaneda, M. R. (1930) *J. exp. Med.* **53**, 325.
— — (1933) *Ibid*, **57**, 381.

RADIOLOGICAL VISUALISATION OF THE EUSTACHIAN TUBE

G. F. REES-JONES, M.R.C.S., D.M.R.E.
SQUADRON-LEADER, R.A.F.V.R.; RADIOLOGIST

JOHN E. G. MCGIBBON, M.B. LOND., D.L.O.
SQUADRON-LEADER, A.A.F.; AURIST

(At a Royal Air Force Hospital)

THE possibility of obtaining information by contrast radiological examination of the eustachian tube became manifest to us during the course of a clinical investigation of the conductive form of deafness which sometimes occurs during loss of altitude in aircraft. Since the results have proved of practical value an account of our technique may be of use to others engaged in similar work.

This type of deafness is considered to be due primarily to obstruction of the eustachian tube brought about by an inequality of the atmospheric and intratympanic pressures. According to Armstrong and Heim (1937) a positive atmospheric pressure which exceeds that within the middle-ear cleft by 90 mm. of mercury may bring about closure of the tube. Nevertheless, in spite of the signs and symptoms, and the studies carried out by Armstrong and Heim and other observers, there is no positive proof that the aural symptoms result from blockage of the tube.

For the purposes of these notes the eustachian tube may be regarded as consisting of two cones of unequal length united at their apices (fig. 1). In the adult it

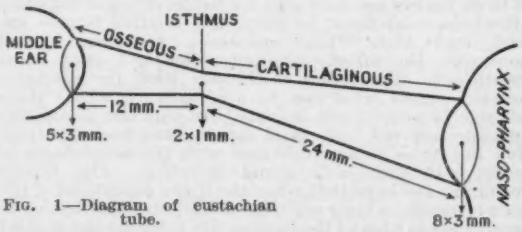


FIG. 1—Diagram of eustachian tube.

measures 35–40 mm. in length, and it forms an angle of 45° with the sagittal plane and of 30° with the horizontal plane. The pharyngeal cone—cartilaginous or membranous portion—represents two-thirds of the entire length and its nasopharyngeal ostium measures 8 mm. by 5 mm. The tympanic cone—osseous portion—constitutes the remaining third of the tube and the dimensions of its opening into the middle ear are 5 mm. by 3 mm. The tubal lumen is narrowest at the junction of the apices—the isthmus—where it measures only 2 mm. by 1 mm.

Published accounts of the radiological examination of the eustachian tube are few.

Spielberg (1927) passed a no. 4 silk catheter "about 3 cm. to 4 cm. within the membranous tube" through a silver catheter and then insufflated 10–15 drops of iodised oil either by a small air-pump or a soft rubber bulb. He stated, also, that the eustachian tube could be filled with iodised oil through any metal tube without inserting a silk catheter. If the measurements given are accurate the silk catheter was certainly in the osseous canal, if not in the middle ear. Furthermore it is our experience that, although it may be possible in some cases to introduce radio-opaque oil through an eustachian catheter alone, it is a haphazard method which affords incomplete pictures of the lumen of the tube.

Engel (1932) demonstrated the lumen of the tube throughout its entire length in a patient suffering from suppurative infection of the peritubal cells which had ruptured into the nasopharynx. While tracing the fistula from its outlet he filled the eustachian tube with opaque oil.

Heimendinger (1938) took lateral and verticomental views of his patients after the passage of silk bougies impregnated with bismuth. He endeavoured to inject iodised oil into the tube but was unsuccessful because the oil escaped from the nasopharyngeal orifice.

Our experiments have shown that in order to obtain satisfactory radiograms it is necessary to introduce into

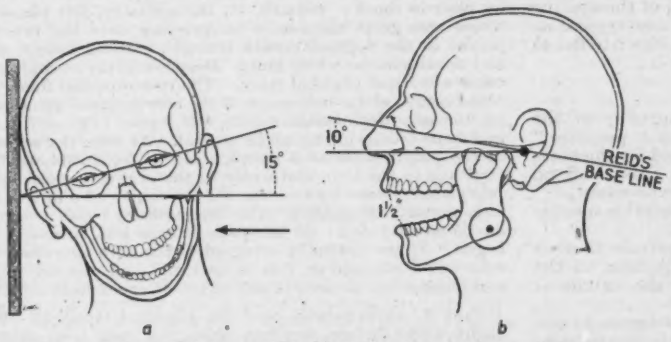


FIG. 2—Positions of skull for radiography of eustachian tube.

the tube a non-irritating opaque medium of low viscosity, and as far as possible to eliminate overlying bony shadows by positioning.

TECHNIQUE

Introduction of opaque medium.—An eustachian catheter is passed into the orifice of the tube via a previously anæsthetised nasal fossa, and a tympanic catheter is then gently pushed through this into the lumen of the tube until it meets with an obstruction. An obstruction has been present in all of the 34 cases in our series, and its site has varied from 0·5 cm. to 2·5 cm. from the tip of the catheter. It is essential at this point to confirm the position of the catheter with a postnasal mirror, and it is surprising and instructive to note how sometimes the tympanic catheter is lying altogether outside the tubal ostium, above or behind the cushion. The stilette is removed and the tympanic catheter itself withdrawn so that not more than 0·5 cm. of its length is projecting into the eustachian tube; 10 minims of opaque medium is then injected into the tympanic catheter under moderate pressure from a well-fitting syringe. The air contained in the tympanic catheter and the excess of opaque medium escape into the nasopharynx round the tip of the catheter. Occasionally the patient feels a sharp pain in the ear for a few seconds, but this is not evidence of patency of the tube since it has occurred in several cases of tubal obstruction.

Opaque media.—We have found iodised oils to be unsatisfactory media because their high viscosity renders their passage almost impossible through the small lumen of the tympanic catheter. A 10% solution of sodium iodide afforded a satisfactory shadow, but one patient developed an acute otitis media after injection so that its use was abandoned. Latterly we have employed Pyelectan, which has caused no untoward symptoms and gives an adequate shadow.

Position.—Patients appear to be least uncomfortable in an upright posture when the catheter is in situ, and fig. 2 shows the positions of the skull for radiography of the eustachian tube. The head is placed in the true lateral plane with the chin tilted away from the cassette at an angle of 15°. The central ray passes through the angle of the mandible of the opposite side to that under examination. The mouth is widely opened, and the head inclined backwards so that Reid's base line forms an angle of 10° with the horizontal plane. Fig. 3 shows the situation of the shadow cast by the eustachian tube when filled with opaque medium in relation to the surrounding bony structures when the skull is in the positions described.

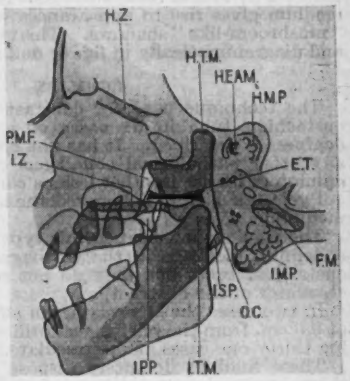


FIG. 3—Relations of shadow cast by eustachian tube to surrounding bony structures. H = heterolateral; I = ipsolateral; Z = zygomatic arch; T.M. = temporomandibular articulation; E.A.M. = external auditory meatus; M.P. = mastoid process; F.M. = foramen magnum; O.C. = basi-occiput; S.P. = styloid process; P.P. = pterygoid plate; P.M.F.; pterygomaxillary fissure.

Exposure factors.—All the films were taken at 56 kV and 40 milliampere seconds. Intensifying screens were used and the radiography was carried out at a distance of 33 in.

RESULTS

Visualisation on the films is good as far as the isthmus. It has been impossible to make any radiological study of the osseous portion of the tube, because in all of our patients an obstruction was demonstrated in the cartilaginous segment. In two cases the blockage began at the isthmus, in one at 0·5 cm. from the pharyngeal orifice and in the remaining thirty-one cases at 1–2 cm. from the ostium.

The shadows cast are faint in comparison with the surrounding structures, so that positive reproductions give a totally inadequate representation of the definition which is actually obtained on the X-ray film. For this reason only two typical radiograms are here shown (figs. 4*a* and *b*).

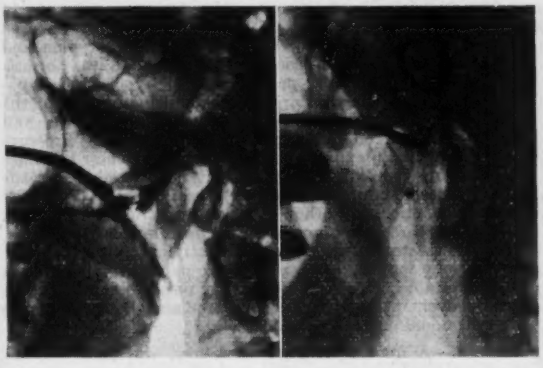


FIG. 4—Typical radiograms of eustachian tube after injection of pyelectan. In (*a*) cartilaginous portion of tube is filled as far as isthmus; in (*b*) medium is arrested 0·5 cm. from tip of catheter.

The X-ray appearances in our series have fallen into two distinct groups. When the obstruction is at or near the isthmus there is a shadow with comparatively smooth edges gently fading to a point at the junction of the cartilaginous and osseous portions. This can be seen in fig. 4*a* and is reproduced in fig. 5*a* and *b*. There is always an overflow of medium which regurgitates down the lateral wall of the pharynx and occasionally over the soft palate. The most common form of obstruction occurs at 1–2 cm. from the

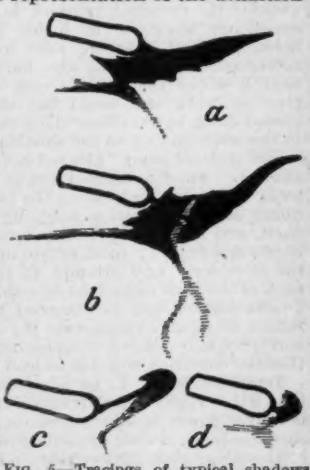


FIG. 5—Tracings of typical shadows observed in cases of eustachian obstruction. (*a*) and (*b*) obstruction at or near isthmus. (*c*) and (*d*) obstruction 1–2 cm. from tip of catheter.

catheter tip and in these situations pooling of the opaque medium gives rise to appearances which are typical as "mushroom-like" shadows. This type is shown in fig. 4*b* and diagrammatically in fig. 5*c* and *d*.

SUMMARY

The technique used for contrast radiography of the eustachian tube in 34 cases of aviation "pressure" deafness is described. It has not been used to elucidate any other pathological conditions of the tube, and no opinion of its use in other lesions can be expressed.

Pyelectan has so far proved the most suitable opaque medium.

The results show that in this type of deafness there is a definite blockage in the cartilaginous portion of the eustachian tube, but they do not reveal the extent or character of the obstruction.

In two cases the stenosis began at the isthmus, in one at 0·5 cm. from the pharyngeal orifice and in the remaining thirty-one cases at intermediate sites.

These findings definitely dispose of the theory that there is a valve-like action of the pharyngeal orifice which, by its closure, prevents the entrance of air into the tympanum.

Our thanks are due to the Commanding Officer of this hospital and to the Director General of Medical Services, R.A.F., for permission to publish these notes.

REFERENCES

Armstrong, H. G. and Heim, J. W. (1937) *J. Amer. med. Ass.* **109**, 417.
Engel, F. (1932) *Beitr. Anat. &c., Ohr.* **30**, 322.
Heimendinger, E. (1938) *Rev. Laryng., Paris*, **59**, 303.
Spielberg, W. (1927) *Arch. Otolaryng., Chicago*, **5**, 334.

BRACHIAL NEURITIS OCCURRING IN EPIDEMIC FORM

R. WYBURN-MASON, M.B. CAMB., M.R.C.P.
REGISTRAR AT THE NATIONAL HOSPITAL, QUEEN SQUARE

THE occurrence of a number of cases of brachial neuritis in the outpatient department of the National Hospital and elsewhere in the last few months suggests that the condition may be the result of an epidemic infection. I can find no reference to any similar condition in the literature, although of course isolated cases of brachial neuritis are well known. The following 4 cases are typical of a series of 42.

CASE-RECORDS

CASE 1.—A house-painter aged 54, admitted on Dec. 2, 1940. He had suffered from a number of carbuncles in the previous 6 years. In May, 1940, he developed two of these in the right axilla which after incision healed in 4–5 weeks. He returned to work in June, but soon began to experience weakness in lifting his right arm above the horizontal and a severe ache in the middle of the arm, accentuated by use of the limb. In the course of the next 6 weeks the pain became so severe that he had to give up work and could not sleep at night. The ache spread down to the elbow along the inner side of the forearm to the wrist and up to the shoulder; it was accompanied by severe stabs of pain, "like red-hot pokers being pushed down the arm," which awakened him at night. Pain ceased at the wrist but began again along the lower third of the palm as a numb, swollen sensation involving the four fingers, back and front, and originating from painful spots in the pads of the hands and fingers; most severe in the region of the point of the shoulder. Any attempt to put the right hand on the back of the neck caused excruciating pain. Cold numbed the fingers further and accentuated the pain; warmth might relieve or greatly exaggerate it; movement accentuated it and lying still relieved it somewhat. There was no evidence that the condition was due to lead poisoning.

Temperature 99° F. on admission. Right shoulder lower than left. Right arm showed slight general wasting and very defective power in all movements, especially in those of the shoulder-joint, which caused great pain. Tendon reflexes brisk and equal on the two sides. In the area of skin supplied by the anterior primary divisions of C3–D3, including the whole arm, considerable pain was elicited by coarse handling, with slight hypo-æsthesia and hypo-algesia. Cold objects caused a painful response running up and down the arm like an electric shock; warmth, on the contrary, felt pleasant. There was great tenderness on pressure over the brachial plexus in the supraclavicular triangle, causing violent pins and needles in the whole limb. Deep sensation normal. No other abnormal physical signs. The cerebrospinal fluid, the blood-count, and a radiogram of the cervicodorsal spine were all normal. Sedimentation-rate was 3 mm. (200 mm. tube) in 1 hour (Westergren), urine normal. At first, the severity of the pain necessitated morphia injections, Antiphlogistine poultices to the arm, diathermy to the arm and neck, and a salicylate mixture by mouth. In the course of a month the pain greatly diminished. The temperature became normal on the second day. As the pain became less, massage was begun. Power gradually returned to the limb and when the man was discharged on Feb. 9, 1941, the pain was only slight and localised to an area in the region of the deltoid muscles.

CASE 2.—A housewife aged 30, admitted April 25, 1941. Eight weeks before, her first child had been born after a normal labour. Chloroform inhalations were used during delivery but no injections except morphia. Next day she had generalised aches and pains, especially across the shoulders and in the lumbar region. She could not sit up unaided and her lower limbs seemed weak and "almost paralysed." All these symptoms disappeared in 24 hours and she was well until 8 days afterwards, when a burning sensation appeared in the point of the right shoulder and deltoid muscle. In the next few days this extended to the elbow, became severe and kept her awake at night, but disappeared after 3 weeks, leaving her with a dull continuous ache in the region of the wrist and elbow, shoulder and lower part of shoulder blade and right side of neck. This was aggravated by movement and associated with a weakness of some movements, especially raising the arm above her head to do her hair, or stretching her arm out in front of her, which provoked sharp pain darting through the shoulder region. She also experienced pins and needles in the whole of the right extremity, coming and going and leaving a numb sensation behind. Since the onset she had also noticed pins and needles in all her toes, reaching at times as far as the knees and often accompanied by a sensation of heat and cold. The week before admission there had been a severe ache between the shoulder blades, stiffness of the neck, an ache in the left wrist and elbow like that in the right arm, and a sensation of pins and needles in this limb extending from the fingers to the wrist. Suckling her child brought on the pain severely.

The right arm showed no wasting, but there was much winging of the right scapula and weakness on raising the arm from the horizontal abducted position to above the head, on abduction and forward movement of the humerus, and on extension of the elbow. There was slight weakness of all other movements of the right elbow, wrist and fingers; the rhomboids, trapezius and latissimus dorsi were normal; there was slight fibrillation of the triceps. The left arm showed slight weakness of all movements. The right triceps jerk was brisker than the left but within normal limits. All other reflexes were normal. In the right arm, there was hypo-æsthesia to all superficial stimuli in patchy areas roughly corresponding to the segmental area of C5. These areas were interspersed with patchy areas of hyperæsthesia and other areas the touching of which caused a sensation of pins and needles, especially in the thumb and outer three fingers. In fact, the segmental area of C5 was surrounded by an area above (C4) and below (C6) where a sensation of pins and needles was evoked by pinprick. Deep sensation was normal. In the left arm, a similar patchy area of hyper- and hypo-æsthesia in the segmental area of D1 and in the tips of the inner three fingers. Similar hyperæsthesia and pins and needles were evoked by pinprick in all the toes. Pressure over the brachial plexus in both the supraclavicular triangles caused pain, especially on the right. The right serratus magnus muscle showed partial reaction of degeneration; the electrical reactions of other muscles were normal. C.S.F., blood-count and radiogram of spine were normal.

She was treated by massage and electrical stimulation, and salicylates by mouth. In a month the pain and paræsthesiæ disappeared and were replaced by hypo-æsthesia. Considerable improvement in power had occurred and the tendon jerks were now equal on the two sides.

CASE 3.—A man aged 63, a secretary, was first seen on July 7, 1941. In October, 1940, he had noticed a severe ache starting in the back of the neck and running to the left shoulder down the outer side of the arm and forearm and dorsum of the hand. The pain was worse on movement or on moving

the head sideways. The arm became very weak but the pain and weakness gradually improved. Early in April he had suddenly found that the right foot had dropped and he was unable to raise his toes from the ground. At the same time he noticed numbness in the outer side of the right calf, front of ankle and dorsum of the foot. This had remained unchanged. There was fairly severe weakness of all muscles of the left shoulder girdle and upper limb, proximally more than distally, and moderate wasting of all muscles. All tendon jerks were absent in the left arm. There was no superficial sensory loss, but considerable tenderness over the cords of the left brachial plexus and ulnar nerve. There was complete paralysis of dorsiflexion of the right ankle and toes, with inversion of the foot and some wasting and fibrillation. Reflexes were all normal. There was complete loss of sensation to all superficial stimuli in the skin area supplied by the right external popliteal nerve. Pressure over this nerve at the head of the fibula caused violent pins and needles in the area supplied by the nerve. There was no tenderness over the right sciatic nerve. No Lasègues sign present; the lumbar spine was mobile.

CASE 4.—A woman of 67, seen on July 9, 1941. Three months before she had begun to get pain in the flexors of the wrist and fingers, just below the elbow, and this gradually extended up the outer side of the right arm to the shoulder and up into the side of the neck and region of the clavicle. It was of a hard, constricting nature and very severe, preventing sleep. The whole arm began to feel weak. A fortnight before admission it passed to the left shoulder and down the outside of the arm to the elbow and also to a small area on the ball of the thumb. The pain was burning and severe. This arm, also, gradually became weak. On examination she had moderate weakness in all muscle groups but especially in the deltoids, right more than left, and in the muscles moving the shoulder-joint. There was no wasting or fibrillation. All reflexes were diminished but just present. There was considerable hyperæsthesia and hyperalgesia and thermohyperæsthesia over the segmental areas of C5–6 on the right and C5 on the left, but there was slight diminution to all forms of superficial sensation over C3–D1 on both sides in the areas of the anterior primary divisions. There was much tenderness on pressure over the cords of both brachial plexuses, the right more than the left.

SUMMARY OF CASES

I have seen in all 42 cases of brachial neuritis between December, 1940, and August, 1941. Dr. J. Purdon Martin has recently seen several other cases presenting paralysis of the serratus magnus or radial-nerve lesions as their chief feature and associated with sensory changes in corresponding skin segments (thus resembling case 2), which are probably related to the condition under discussion. The cases show the following age-incidence:

30–39 years	6 cases	60–69 years ..	10 cases
40–49 „	9 „	70–79 „ ..	8 „
50–59 „	9 „		

The youngest patient was 30 and the eldest 77. The condition was fairly evenly spread out over the whole range from 30 to 80. There were 13 cases in men and 8 in women. The left side was affected in 12, the right in 8, and both sides in 3. The months of onset were: June, 1940, 1 case; October, 1940, 1 case; January, 1941, 3 cases; February, 1941, 3 cases; March, 1941, 3 cases; April, 1941, 6 cases; June, 1941, 12 cases; and July, 1941, 13 cases. Thus the disease appeared in the winter and persisted into spring and summer.

The clinical features suggest that the anterior primary divisions of the spinal nerves from C3 to D4 inclusive, in whole or in part, are involved. In most cases the upper part of the plexus, and the skin segments served by C5–6 nerves, are most affected; but on careful examination there are also, in every case, sensory changes of a wider distribution. In one (case 2) there were less severe changes on the opposite side and slight sensory changes in the lower limbs. In most cases the motor weakness was general and in long-standing cases accompanied by wasting, but in others it was limited chiefly to one or two muscles—e.g., serratus magnus and triceps. Every case began with pain, often burning, and typically situated in the region of the shoulder blade. The tendon reflexes in the affected limb were usually increased or decreased, the former in earlier and less severe cases. The severity varied considerably from case to case, from mild cases rapidly responding to treatment to very severe cases (case 1).

The ultimate outlook is good and in the milder cases improvement soon sets in, but the more severe cases are very refractory to treatment as far as they have been followed.

The occurrence, in the winter and spring, of so many cases of what is normally a relatively rare condition, is remarkable. Only 13 such cases were admitted to the National Hospital between 1924 and the present outbreak. The close similarity to one another, the localisation of the lesion to the anterior primary divisions of the spinal nerves, and the tenderness in the region of the cords of the plexus and over the ulnar nerve in some cases, suggest that the condition is the result of an infection, and that the site of the lesion is in the nerves themselves at a point distal to the origin of the posterior primary divisions.

RELATIONSHIP TO EXTERNAL POPLITEAL LESIONS

In the last 3 months I have also seen 7 cases of lesions occurring suddenly and for no apparent reason in the external popliteal nerve. An example of this is case 5. There seems to be a relation between these cases and those of brachial neuritis; they have occurred during the same period and in case 3 the two conditions occurred at the same time.

CASE 5.—A cobbler aged 36, admitted on May 5, 1941. In 1938 he had a severe attack of left-sided sciatica and lumbago, which cleared up after 7 weeks' rest in bed. Three weeks before admission, while at work, he developed sudden left foot-drop, and in a few days numbness on the outer side of the calf and dorsum of the foot. On examination he had complete paralysis of dorsiflexion of ankle and toes and inversion of the foot. The tendon reflexes were normal. There was gross diminution of all forms of superficial sensation over the skin area supplied by the external popliteal, but no tenderness over the external popliteal or sciatic nerves. A radiogram of the spine and the C.S.F. were normal. The electrical reactions of the anterior tibial group of muscles were normal.

He was treated with antiphlogistine poultices, massage and electrical stimulation to affected muscles, and was given a bed-boot to support the foot. He improved considerably after 6 weeks' treatment.

DISCUSSION

What is the nature of this condition? Is it an infection by a neurotropic virus, like herpes zoster? Is it a "fibrositic" condition? This seems unlikely, since in no case were there other rheumatic manifestations. Is it an allergic reaction to some infection, like the brachial neuritis which occasionally follows serum injections? Case 2 suggests that this may possibly be so; here symptoms occurred 8 days after signs of a general infection following parturition. The period of 7–14 days is a common interval before allergic manifestations appear. In case 1 symptoms occurred about 5 weeks after the appearance of carbuncles. One case seen by Dr. Purdon Martin began with severe headache and a temperature of 104° F., and examination a few days later revealed winging of the scapula. Whatever the ætiology it seems to be a clinical entity, possibly the result of an hitherto undescribed infection which is appearing in this war for the first time. It may be connected with a number of cases of serratus-magnus palsy with sensory changes in corresponding skin segments and of cases of foot-drop and sensory changes in the skin area supplied by the external popliteal nerve, which have also occurred lately. No light can be thrown on the source of any infection. In no case did a patient frequent public air-raid shelters; there was only one case in which sore throat had preceded the illness. None had had serum injections, or showed any obvious nutritional defects. All my cases came from London, but in Dr. Purdon Martin's cases this has not been so.

SUMMARY

An unusual amount of brachial neuritis was seen in London in the eight months December, 1940–August, 1941, amounting to a small epidemic.

A series of 42 such cases is reported and 4 are described in detail.

The cause of the condition is unknown.

I wish to thank the honorary medical staff of the National Hospital for permission to publish the case-reports.

RESISTANCE OF INFLUENZA VIRUS TO DRYING AND ITS DEMONSTRATION ON DUST

DERRICK G. FF. EDWARD, M.D. LOND.

(*National Institute for Medical Research*)

RECENTLY attention has been directed to the part played by dust in the spread of disease, particularly infection due to *Streptococcus pyogenes* and *Corynebacterium diphtheriæ*.* Both these organisms are known to survive drying and can be recovered from the dust of rooms inhabited by infected patients (Thomas 1941, Crosbie and Wright 1941). Under experimental conditions it has been shown that by shaking and beating blankets on which streptococci have been dried the organisms can be distributed in the air on dust particles in a virulent form (Van den Ende, Lush and Edward 1940). In other infections the possibility of spread by dust obviously depends on the ability of the causal organisms to withstand drying. Although influenza is regarded as an air-borne infection, little attention has been paid to transmission by dust and it has not been determined whether influenza virus can resist drying under natural atmospheric conditions, the only data collected having been in regard to its resistance to drying in vacuo in the cold. It was therefore decided to investigate the possibility that dust might be a factor in the spread of influenza and to determine the resistance of the virus to drying.

SURVIVAL ON DUST

Throughout this investigation the PR8 strain of influenza A virus was used. Suspensions of virus were obtained by inoculating mice; their lungs were collected three days later and after being ground up were suspended in a mixture of equal parts nutrient broth and physiological saline. Tests for the presence of virus were made by inoculating batches of three mice intranasally under ether anæsthesia with 0·05 c.cm. of the suspension under test. Animals that died were examined post mortem for the presence of influenzal lung lesions. Surviving mice were killed on the tenth day and examined similarly.

One experiment was carried out to discover whether, after artificial impregnation of a blanket, the virus could survive and be distributed into the air by shaking. A previously sterilised strip of blanket about 20 in. × 8 in. was heavily impregnated with a 5% suspension of virus by means of a scent spray and was then hung up to dry. Five hours later it was shaken vigorously in a closed tank of about 10 c. ft. capacity. During shaking, and for 10 min. afterwards, air was sucked out of the tank through a Wells air-centrifuge at the rate of 2 c. ft. per minute. To collect the virus 10 c.cm. of broth had been placed in the rotating cylinder and this was finally tested by inoculating three mice intranasally. This method for recovering suspended influenza virus particles from the air was originally described by Wells and Brown (1936). The experiment was successful and moderate-sized influenzal lesions were obtained in each of the mice.

On another occasion a ferret was infected with the mouse-adapted strain of PR8 in use throughout the investigation. For the two or three days during which the animal was sneezing and showing the usual symptoms of infection several Petri dishes containing small amounts of sterilised dust were left exposed in various parts of the cubicle containing the ferret in its cage. At the end of this time each specimen of dust was well soaked in broth to extract any virus, centrifuged gently and the supernatant tested on mice. In this way virus was demonstrated in the dust from a dish placed next to the ferret cage and 3 in. away from it, but not from dishes placed further away in positions which could not be reached by direct droplet projectiles.

These experiments show that influenza virus can resist drying and can be demonstrated in dust that has been infected both artificially and naturally. The investigation was therefore continued, to assess quantitatively the degree of survival and persistence of the virus after drying and to examine the factors that might influence these, such as physical conditions and the nature of the surface on which the virus was dried.

EXPERIMENTAL METHODS

As test materials for impregnation the following were used:

Two in. squares of cotton sheet; 1 in. squares of serge, both of which had been previously well washed and then sterilised; glass microscope slides; and sterilised household dust, sieved sufficiently to remove the large fibres. The squares of sheet and serge were impregnated by allowing 0·7 and 1 c.c. respectively of 5% influenzal mouse-lung suspension to soak into them. On the glass slides 0·1 c.cm. of the suspension was spread as a thin film along the whole of one side. The dust was placed in Petri dishes and impregnated by rubbing 0·2 c.cm. of the suspension into it with a spatula, so that all the fluid was soaked up. In each case the samples were allowed to dry by exposing them to the air of the laboratory under the ordinary atmospheric conditions prevailing. They were afterwards stored in the dark in a cupboard until it was necessary to test them.

The following methods were used for extracting the active virus.

The squares of sheet and serge were soaked for 15 min. in 5 c.cm. of nutrient broth in Petri dishes, the fluid being afterwards squeezed out of them as much as possible by twisting with two pairs of Spencer-Wells forceps. The dust was thoroughly mixed with 5 c.cm. of broth and the mixture centrifuged gently to recover the broth. The slides were simply soaked in 5 c.cm. of broth. In each case the broth, and tenfold dilutions of it, were inoculated intranasally into mice to estimate the amount of virus recovered.

Except from the glass slides, it did not appear likely that these methods of extraction effected a complete recovery of viable virus. In order to find out the proportion recovered, control samples of the materials were impregnated in the manner described and extracted at once before drying took place. With the sheet there was no appreciable difference between the amount of virus recovered and that which was applied to it. Only 10% of the virus applied, however, was recovered from the serge and the dust.

SURVIVAL AND PERSISTENCE AFTER DRYING

Specimens of serge, sheet, dust and glass slides were impregnated in the manner described and the viable virus extracted before and after drying. It was found that between 1 and 10% of virus withstood drying on the serge and the dust and 10% or more on the glass slides. When squares of sheet were impregnated with 0·7 c.cm. of virus suspension, an amount sufficient to saturate the square almost completely, 1% of virus survived drying, but when 0·1 c.cm. of suspension was applied as a drop in the centre there was survival of little more than 0·01%. A similar difference in survival depending on the degree of impregnation did not occur with the serge, and the reason for the difference with the sheet is not apparent. In fact, the opposite effect might have been expected, if heavier impregnation had led to slower drying; for it was found that, if a square of sheet was impregnated with 0·7 c.cm. and drying took place slowly because of the humidity of the atmosphere, only 0·01% of virus survived.

After drying, impregnated specimens were stored in the dark in the laboratory and tested for active virus after one, three and seven days, and thereafter at weekly intervals. It was found that virus disappeared rather slowly at a regular rate; the length of time during which virus could be demonstrated on a substance depended on the amount initially present when drying was complete.

The largest amount of dried virus was obtained on the glass slides, and the persistence of this is shown in the table. In it the results of the titrations in mice are expressed numerically; and in the last column there is an estimate of the total active virus present on the slide, obtained by multiplying the reciprocal of the highest infecting dilution by 100, since the inoculum for a mouse was 1/100th part of the volume of broth used for extraction. It will be seen that after three days 10% of virus remained alive and after a week 1%. After five weeks virus could still be demonstrated although there was then only 0·01% of the amount originally present. The findings with dust were similar to those with sheet and

* A review of the subject appeared in a leading article in the *Lancet*, 1941, **1**, 511.

serge, and they can be summarised as follows. When drying was complete there was approximately 1×10^4 M.I.D. of virus on specimens of each of these materials. A slight decrease might or might not be detected after three days; at the end of a week about 1×10^3 (10% of the original amount) remained alive and after two weeks 1×10^2 M.I.D. (1%). This was the least amount which could be detected and tests at three weeks were negative.

PERSISTENCE OF INFLUENZA VIRUS DRIED ON GLASS

Interval since impregnation	Mice inoculated with dilutions of broth extract			Estimated amount of viable virus in M.I.D.
	1/1	1/100	1/10,000	
4 hours ..	5.5.5	5.5.2	2.1.0	1×10^6
24 hours ..	5.5.5	5.5 ..	..	..
3 days ..	5.5	3.2.2	..	1×10^5
7 days ..	5.5.5	1.1.0	..	1×10^4
2 weeks ..	5.5.5	0.0.0	..	1×10^3
3 weeks ..	3.2.1	0.0.0	..	1×10^2 to 10^3
4 weeks ..	2.1.1	..	..	1×10^2
5 weeks ..	2.1.0	..	..	1×10^2
6 weeks ..	0.0.0	..	..	Less than 1×10^2

Virus was extracted with broth and titrated in mice. Resulting infection is expressed in terms of a numerical index. Thus 5 represents death with influenzal consolidation of the lung. Among survivors, killed on the tenth day, consolidation affecting three-quarters of the lung is represented by 3, half by 2 and a quarter or less by 1.

Factors influencing survival and persistence of dried virus.—Temperature has a considerable effect on the time for which the dried virus remains alive. Squares of sheet and glass slides were impregnated with 0·1 c.cm. of virus suspension and dried in the usual way. Half of them were kept at 37° C. and half at 22° C. On sheet at 22° C. virus could be demonstrated on the third day and not on the seventh; at 37° C. it was not detectable at the end of twenty-four hours. On glass it was present in recognisable amount for four weeks at 22° C., but for less than one week at 37° C. On the other hand, the higher temperature did not have the same deleterious effect during the drying process. When impregnated specimens of sheet and glass were dried in the incubator at 37° C. and comparison made with the amount of virus surviving drying at 22° C., it was found that on glass there was little difference, and on sheet rather more virus withstood drying at 37° C. This may be due to an increased rate of drying at the higher temperature, leading to increased survival; on the glass the rate of drying of the thin film is probably almost maximal at 22° C.

Light also had a deleterious effect on the persistence of dried virus. Impregnated squares of sheet were placed in the dark as usual, and compared with similar squares kept on the bench near a window facing north. In the dark virus persisted for a week, but in the light it was not detected on the third day.

In order to examine the possible effect of the amount of protein in the suspending fluid, and to mimic more closely natural secretions infected by virus, 5% suspensions of influenzal mouse lung were made in 10% horse-serum broth and in normal human saliva, as well as in broth-saline. With each, smears were made on glass slides in the usual way, allowed to dry and tested at intervals for the presence of virus. The proportion of virus which survived drying and its persistence were the same for broth-saline and for serum-broth. With saliva only 1% of that amount could be found after drying, perhaps owing to a direct destructive action on the virus by a lysozyme-like agent such as has been described by Burnet, Lush and Jackson (1939). In another experiment it was shown that reduction of the concentration of the virus by using, for impregnation, a 0·5% instead of a 5% suspension of lung had no effect on the proportion of virus that survived or its persistence.

VIRUS DEPOSITED IN A PARTICULATE FORM

In the experiments just described impregnation was effected by wetting the test materials completely. Under natural conditions, however, such gross soaking with infected secretions from influenzal patients is unlikely to occur, except perhaps with handkerchiefs and from expectoration. Contamination will be chiefly by droplets expelled during sneezing and coughing, and by droplet nuclei finally impinging on some surface. The findings so far presented probably apply to contamination by spitting and by the larger droplets, but it was considered necessary to confirm them by investigating the persistence of virus deposited as small particles or droplet nuclei. It was found that, when specimens of sheet were artificially impregnated with droplet nuclei, 10% of the amount of virus which could be demonstrated immediately after impregnation was still alive after one week, and after three weeks there was 1%. On the other hand, when droplet nuclei were deposited on a smooth surface inside a closed glass bottle, in one experiment no virus could be demonstrated after six hours, and in another, although virus was present after five hours, it could not be detected after twenty-four hours.

DISCUSSION

It has been shown that, when certain materials are impregnated with suspensions of influenza virus, as much as 10% of the virus can withstand the process of drying and can then remain alive for days or weeks at ordinary temperatures. After three days there may be little or no appreciable loss of virus; thereafter there is a steady decrease, between 1 and 10% remaining after a week. Minute dried particles containing influenza virus (droplet nuclei), such as are distributed by the coughing and sneezing of infected patients, can become attached to a material like sheet and persist in a similar manner, so that 10% may still remain alive after a week. These experimental results suggest that, if articles become contaminated with infective discharges from patients with influenza either directly or indirectly by means of droplets and droplet nuclei, appreciable amounts of virus may survive drying and persist for at least several days. In that case such articles are infective, for virus can reach a fresh host by direct contact or by the aerial transfer of dried virus on dust particles. Virus has been demonstrated on dust exposed near a ferret suffering from influenza. Unfortunately a similar demonstration of virus in the neighbourhood of human beings is not possible because of the low infectivity of such human strains for animals. Previous epidemiological experience with influenza has not suggested that dust plays any part in its spread, but further observations might be of interest in the light of these experimental findings. For reasons connected with the war the experimental investigation itself has had to be interrupted.

In certain other virus diseases evidence exists for believing that virus persisting in the dried state on dust and other articles may play some part in their spread. Infection by psittacosis has been reported in persons handling imported feathers (see van Rooyen and Rhodes 1940). Dried epidermal scales from cases of smallpox are regarded as infective, and their aerial transfer may carry the infection to a distance. With foot-and-mouth disease the results of detailed experimental investigation are available (Report 1927, 1931); these show that when dried on certain materials the virus can remain alive for several weeks. Hay treated with infective saliva was capable a month later of transmitting the disease to a calf which ate it. Storage in the light or at 37° C. had a lethal effect on the dried virus of foot-and-mouth disease, similar to that recorded here with influenza virus. The time of survival of the former varied greatly according to the material impregnated. With influenza virus, however, although only a few representative test materials were employed, no such differences were noted.

SUMMARY

An experiment is described showing that, after impregnation of a blanket with a suspension of influenza virus, the virus survives drying under ordinary atmospheric conditions and can be distributed in the air on dust particles by shaking the blanket.

Virus could be demonstrated on dry dust exposed near a ferret infected with influenza.

Results are given of a quantitative estimation of the amount of influenza virus that can withstand drying on a variety of materials including household dust. Between 1 and 10% was found to survive, but, if drying took place slowly in a humid atmosphere, as little as 0·01% survived.

The time for which the dried virus remained alive was estimated. There was little depreciation after 3 days, and 10% might persist for a week and 1% for a fortnight.

Disappearance of virus was much more rapid when impregnated materials were kept at 37° C. or in the light.

The epidemiological significance of these findings is discussed and reference is made to other virus diseases in which a part is possibly played by dust and dried virus in the spread of infection.

I am grateful to Dr. M. Van den Ende for helping me to finish this investigation, and to Mr. R. E. Glover for his coöperation in the experiments with ferrets.

REFERENCES

Burnet, F. M., Lush, D., Jackson, A. V. (1939) *J. Path. Bact.* **49**, 241.
Crosbie, W. E. and Wright, H. D. (1941) *Lancet*, **1**, 656.
Report (1927). Report of the Foot-and-Mouth Disease Research Committee. 2nd Progress Report, London.
— (1931) 4th Progress Report, London.
Thomas, J. C. (1941) *Lancet*, **1**, 433.
Van den Ende, M., Lush, D., Edward, D. G. ff. (1940) *Ibid*, **2**, 133.
Van Rooyen, C. E. and Rhodes, A. J. (1940) In Virus Diseases of Man, Oxford.
Wells, W. F. and Brown, H. W. (1936) *Amer. J. Hyg.* **24**, 407.

CONTINUOUS ADMINISTRATION OF ETHYL CHLORIDE

U. M. WESTELL, M.R.C.S., D.A.
ANÆSTHETIST TO PRESTON ROYAL INFIRMARY

ETHYL CHLORIDE has been in use as a single-dose anæsthetic for over 40 years. The early anæsthetists recognised its dangers, which in addition to its toxic action on cardiac muscle are mainly due to its extreme volatility; this makes control almost impossible and overdosage all too easy. They regarded it as a drug whose administration required more skill and vigilance than was justified by its sphere of usefulness. In 1902 Guy[1] of Edinburgh found that ethyl chloride required a smaller effective dose, and was thus rendered safer, if given in combination with nitrous oxide, and devised a simple apparatus for induction of anæsthesia by this method. In 1911, Guy and Ross[2] produced another apparatus for administration of nitrous oxide and oxygen continuously, with addition of fractional doses of ethyl chloride as required. This apparatus is still used in Edinburgh for dentistry. Since 1911 no advance has been made, and ethyl chloride is still widely used but only in single doses.

For the past 15 months I have used ethyl chloride by continuous vaporisation with nitrous oxide and oxygen. The ethyl chloride was sprayed into the chloroform bottle of a Boyle or Walton apparatus in quantities varying from 5 to 20 c.cm. according to the anticipated duration of operation and resistance of the patient. Induction was with nitrous oxide; then, if relaxation was inadequate, ethyl chloride vapour was added gradually by slowly raising the lever of the chloroform bottle (with the plunger well raised in the Boyle apparatus). When relaxation was adequate the vapour was cut down to the minimum required for maintenance. Partial rebreathing was used and cyanosis avoided by adequate oxygenation. Results are shown in the table. By this method the anæsthesia was as easily controlled as when divinyl ether was used instead of ethyl chloride by the same technique. Cough did not occur, and apnœa and laryngeal spasm, so troublesome with ethyl chloride administered alone, were rare; when they did occur they were due to too rapid increase of ethyl chloride concentration and easily stopped by cutting it down a little and adding carbon dioxide. No appreciable drop in blood-pressure was noted even in patients already shocked; indeed, a sustained, mildly stimulating effect was produced in these. Recovery was rapid (1–10 min., as with divinyl ether), and postoperative vomiting only very slightly commoner than with divinyl ether. The period of recovery was taken as from cessation of anæsthetic to the time at which the patient could first give a coherent answer to the questions: "What is your name?" and "How old are you?"

Ethyl chloride by this method is particularly useful in cases requiring frequent painful dressings where nitrous oxide is insufficient; and in these cases after-pain is notably lessened.

1. Ross and Fairlie's Handbook of Anæsthetics, Edinburgh, 1940, p. 202. 2. *Ibid*, p. 210.

One particular terrified refugee, aged 13, who had had nine anæsthetics in her own country, was anæsthetised by this method on alternate days for 2 months. No premedication was given, no after-effects were seen, and the child ate a hearty meal within ½–¾ hr. after anæsthesia on most occasions, gaining ½ st. in weight in the 2 months. She had proved very resistant to ether, which caused prolonged vomiting.

The quantity of ethyl chloride used varied in each case, from 3 c.cm. for an operation lasting 10 min. in a fit adult male to 25 c.cm. for an operation lasting 1 hr. 10 min. in a similar subject, neither having had premedication. The cases were mostly casualties, and a large proportion had fractures, simple or compound, lacerations of varying extent and burns. The ages of the patients ranged from 4 months to 97 years. Opiates were used for adults only and were either morphia gr. ¼ with atropine gr. 1/100, or morphia gr. ¼ with hyoscine gr. 1/200.

The method was found to be particularly useful for ambulant casualties, who, owing to rapid recovery and absence of pain or after-effects, were able to look after themselves and go home very soon after operation, thus saving much nursing attention and couch space in a busy department. It is, however, essentially a fine-adjustment method, and not to be lightly undertaken by the inexperienced, to whom anæsthetics in a casualty department are too often entrusted. In my view an experienced anæsthetist is especially necessary in a busy casualty department if as many cases as possible are to remain ambulant.

There were 2 deaths in the ethyl-chloride series, one from septic absorption following severe burns, 6 weeks after operation, and one in an infant aged 4 months, from bronchopneumonia after laparotomy for acute intestinal obstruction; this was the only post-operative chest case in either series. Four deaths occurred in the divinyl ether series, two from gas gangrene following extensive wounds, one 3 days and one 10 days after operation; and two with severe burns, one from secondary shock, 6 hours after operation and one 14 days after from toxæmia.

EXPERIENCE IN 51 CASES ANÆSTHETISED WITH ETHYL CHLORIDE, GAS AND OXYGEN, AND IN 61 GIVEN DIVINYL ETHER IN PLACE OF THE ETHYL CHLORIDE

—	Duration			Incidents		Sequelæ				
	Less than 15 min.	15–60 min.	Over 60 min.	Laryngeal spasm	Vomiting	Vomiting	Retching	Ptyalism	Headache	Noise and violence.
ETHYL CHLORIDE										
No premedication	19	11	2	1	1	6	3	1	1	5
Atropine only	2	4	0	2	0	1	1	0	0	1
Opiates ..	0	10	3	0	1	7	1	0	0	0
Total ..	21	25	5	3	2	14	5	1	1	6
DIVINYL ETHER										
No premedication	12	9	0	0	2	5	0	2	0	3
Atropine only	5	6	0	0	0	1	1	2	0	1
Opiates ..	3	17	9	0	2	4	0	0	1	1
Total ..	20	32	9	0	4	10	1	4	1	5

SUMMARY

A series of 51 cases anæsthetised with nitrous oxide, oxygen and ethyl chloride vapour are compared with a series of 61 cases in which nitrous oxide, oxygen and divinyl ether was given by the same method. The ethyl chloride (3–25 c.cm. according to the length of operation) was sprayed into the chloroform bottle of a Boyle or Walton apparatus, and anæsthesia was maintained for periods of 10–70 min. Adults received morphia and atropine or morphia and hyoscine before induction.

The patients were mainly fit, ambulant casualties, but some were shocked, with extensive injuries.

Postoperative sequelæ were few and transient, and constitutional disturbance minimal.

Ethyl chloride seems to be brought under control by this technique, but requires the same constant watchfulness which is necessary during the administration of chloroform.

THE KONDOLÉON OPERATION FOR CHRONIC LYMPHŒDEMA

E. D. TELFORD, B.CHIR. CAMB., F.R.C.S.
EMERITUS PROFESSOR OF SURGERY, UNIVERSITY OF MANCHESTER

H. T. SIMMONS, M.D., CH.M. MANC., F.R.C.S.
RESEARCH FELLOW, MANCHESTER ROYAL INFIRMARY

(*Neurovascular Clinic of the Infirmary*)

IN a limb swollen by chronic lymphœdema the lesion is confined to the tissues above the deep fascia, and however large the limb may become there is never any œdema below this fascia. The pathology of the condition is in the main unknown, but it is evident from the delay in the excretion of dye injected into these limbs that the normal channels of lymph return are choked. Hence, surgical intervention has been directed in various and often ingenious ways towards establishing some form of alternative channel. It is no doubt true that this is the only approach which promises any permanent good, since other methods, such as rest, massage and support, yield nothing but the most ephemeral improvement.

In the attempt by surgery to develop alternative channels buried materials such as silk threads have been used, efforts have been made to drain the lower limb into the peritoneal cavity via the crural canal, and trial has been made of flaps of normal skin transplanted to form a bridge between the diseased area and the nearest normal tissues. Such attempts have not made good; after a temporary improvement any benefit is lost by the formation of scar tissue. Some continental writers have reported success after sympathectomy. This, however, has not been our experience, and we have shown [1] that the operation of lumbar-cord ganglionectomy has failed to secure any permanent improvement in chronic lymphœdema.

The sole method which today seems worth while is that associated with the name of Kondoléon. Normally, as was first shown by Sappey, there is no lymphatic communication across the deep fascia, and the object of the Kondoléon operation is to develop, by hiatus of the deep fascia, a free interchange between the diseased area and the unaffected intermuscular lymphatic channels. The original conception is due to Lanz who, in a patient with lymphœdema of the thigh, cut long strips of the deep fascia, and leaving these attached by one end fixed the free ends into holes drilled in the shaft of the femur. Kondoléon left the fascial strips attached by one end and plunged the free ends into the intermuscular septa, but the more recent practice has been to excise long and wide strips of the deep fascia together with a wedge-shaped area of the overlying œdematous tissue.

It is, of course, likely that the success of the Kondoléon technique will, as in older operations, be hampered by the formation of deep scar tissue. It is, therefore, the more necessary that the operation be not judged on its immediate effect, but only after a long period.

With this object, we have recently examined 11 patients, 2 men and 9 women, on whom we have done the Kondoléon operation during the last 8 years. In all these patients the operation was done for lymphœdema of the lower extremity. We have excluded from this review a number of patients in whom the operation was done less than a year ago.

Operation.—An adequate Kondoléon operation implies a long incision stretching on the outer side of the limb from the trochanter to the external malleolus, and on the inner side from the level of the saphenous opening to the internal malleolus. These incisions should be interrupted for 3 in. at the level of the knee, and the inner incision will, of course, be planned to avoid the internal saphenous nerve and vein. We have found it best to carry the incision at once through the deep fascia. By everting the edges of the incision in the fascia it is possible easily to cut a wide strip of fascia and overlying tissue from each side of the incision. The wound is closed with particular care to hæmostasis; no drain is necessary and the bandage should be firmly applied.

RESULTS

If return to normal is expected of the operation, the results are disappointing. In but 2 of our cases has this fortunate result been approached, and it is interesting to note that both cases were of post-traumatic origin, dating in each instance from a comparatively slight injury inflicted 6 years before the operation. The end-results in the 11 patients do, however, show some gratifying features. In all but 1 patient there has been no further increase in the girth of the limb, and it is pleasing to note that in no case has there been any further upward extension of the disease. Many measurements of these limbs have been made under comparable conditions, always in the mid-afternoon after reasonable exercise, and these show in 10 of the 11 patients a reduction in girth of ½–2 in. In all, 7 patients state that they have been able to return to work and have lost the pain and discomfort which formerly rendered them incapable of sustained effort. One says that "although the leg may swell after exercise as much as before, it goes down ever so much more quickly." This statement is interesting as affording some evidence that the operation has succeeded in its object of securing a by-pass for the lymphatic flow.

We think it fair to evaluate the Kondoléon operation as follows. It will not secure a return to normal, but it will, as a rule, reduce the girth of the limb by some 25–30% of its increase; and, what is more important, it appears to stop further extension of the disease. It is likely to succeed in relieving the pain and discomfort of the heavy limb and may allow of a return to work. For these reasons we think the operation is worth while. It is safe and easy, and in the present state of our knowledge is the only operation which can hold out any prospect of improvement.

SUMMARY

Eleven patients on whom the Kondoléon operation has been performed have been observed for periods of 2–8 years.

The results show that the operation, although not likely to yield a complete cure, produces improvement which justifies its use for cases of chronic lymphœdema.

1. Telford, E. D. and Simmons, H. T. *Brit. J. Surg.* 1938, **25**, 765.

FURTHER EXPERIENCES WITH SULPHAPYRIDINE IN FILARIASIS

K. VIGORS EARLE, M.D. LOND & CAMB., D.T.M.
LATELY SECOND GOVERNMENT MEDICAL OFFICER IN THE ADMINISTRATION OF NAURU, NAURU ISLAND, CENTRAL PACIFIC

SINCE the publication of a series of cases of filarial complications, successfully treated with sulphapyridine (Earle 1941a, b) some further cases have been treated and the results seem worthy of record.

Lymphadenitis.—The strikingly beneficial effect of sulphapyridine on the lymphadenitis complicating filariasis probably indicates that the complication is due to secondary streptococcal infection rather than to the filariasis itself. No diminution in the number of microfilariæ of the blood-stream is produced by the drug.

CASE 1.—A Nauruan woman aged 40. First seen on Jan. 2, 1941, when she complained of fever and pain and swelling in the left popliteal space of two days duration. There was a past history of several similar attacks. She was a sturdy woman, with no abnormalities save enlarged tender glands of the left popliteal space. The overlying skin was tense and dark red. There was no enlargement of the crural, inguinal or any other lymphatic groups. No septic foci were found on the left leg or foot. Microfilariæ were found in the blood. Local treatment produced no relief, and on Jan. 6 sulphapyridine (M. & B. 693) was begun, being given four-hourly. The first two doses were 2 g. each and the remaining eleven doses were each 1 g. This course was repeated. The temperature fell to normal and the local pain and swelling diminished within twelve hours of beginning treatment.

Cellulitis complicating elephantiasis.—Devitalised elephantoid tissue is subject to recurrent secondary invasion. In such conditions sulphapyridine is particularly useful, though it does not act on the elephantiasis or the underlying filariasis.

CASE 2.—A Nauruan woman aged 25. First seen on Jan. 6, 1941, when she complained of extreme pain and swelling of the left leg, of three days duration. She was otherwise healthy except for severe elephantiasis of the left lower limb. The elephantoid swelling reached up to the level of the knee.

Superimposed was a severe cellulitis, extending upwards to the lower third of the thigh. Microfilariæ were present in the blood at night. Sulphapyridine, eleven doses (two of 2 g., the remaining nine of 1 g.), was begun on Jan. 6, and the course was repeated. There was rapid disappearance of the cellulitis but no alteration in the appearance of the original elephantiasis.

CASE 3.—*Cellulitis and filarial myositis.* A Nauruan man, aged 60, first seen on Jan. 4, 1941, complained of fever and pain in the right leg. He was rather emaciated, with no lesions in the cardiovascular, pulmonary, alimentary or central nervous systems. There was elephantiasis of both legs and the left forearm. In addition, cellulitis was present in the right leg and thigh. No microfilariæ were found in the blood. Sulphapyridine in courses similar to those given in cases 1 and 2 produced lysis of the temperature. The local inflammatory reaction subsided concurrently. On Jan. 14 a further swelling of the right calf was observed but this time the swelling was beneath the elephantoid tissue, in the calf muscles. Sulphapyridine was again given but this time did not produce any response, even when repeated. Since the pain was becoming intolerable an incision was made and dark greenish pus evacuated. The patient made a slow recovery.

This case again illustrates the fact that, while sulphapyridine acts rapidly on secondary infection, it is inert on filariasis itself. The second swelling was undoubtedly due to a filarial myositis which is uninfluenced by sulphonamides. In this variety of myositis the blackish-green pus is usually sterile (Quin 1941), thus differing from true tropical pyomyositis, where culture of the pus yields staphylococci (Hughes 1938), and in which sulphapyridine has a well-marked curative action (Earle 1939).

I wish to thank Dr. B. H. Quin, senior Government medical officer in the administration of Nauru, for permission to publish this paper.

REFERENCES

Earle, K. V. (1939) *Trans. R. Soc. trop. Med. Hyg.* **33**, 169.
— (1941a) *Brit. med. J.* **1**, 476.
— (1941b) *Med. J. Aust.* **1941, 2**, 200.
Hughes, W. (1938) *Quart. J. Med.* **7**, 537.
Quin, B. H. (1941) Personal communication.

BIATRIAL TRILOCULAR HEART
WITH ATRESIA OF THE MITRAL VALVE

E. W. WALLS, M.B. GLASG.
LECTURER ON ANATOMY IN GLASGOW UNIVERSITY

Cor biatriatum triloculare with atresia of the mitral valve is seldom encountered. Dudzus (1922) described a case and in his account of the specimen included a short summary of 11 published cases. Since then only 2 further cases have been recorded (McIntosh 1926, Abbott 1932). In his Hunterian lectures on malformations of the heart, Keith (1909) did not include this type of congenital cardiac abnormality, but at one point, while discussing the occurrence of cor biloculare, mentioned that he had seen 3 cases in which the hearts, all from stillbirths, showed mitral atresia in association with extremely minute left atria. Whether these cases were in other particulars similar to true cor biatriatum triloculare with mitral attesia is not made clear.

CASE-HISTORY

The infant was admitted to hospital at the age of 11 weeks. She was fairly well nourished but her colour was poor, lips and nose being cyanosed. For several days she had been disinclined to feed and had been coughing a great deal. During feeds she became very blue but attacks of cyanosis occurred independently of feeding, being followed by pallor. The chest showed signs of considerable inflammatory congestion. The heart was slightly enlarged; the sounds were pure and of good quality at the apex, but at the base only one sound could be heard, a tapping preceded by a short murmur. The child became increasingly cyanosed and sunken-looking and died aged 14 weeks 2 days. While in hospital the heart-rate varied between 130 and 160 and the respirations between 30 and 60.

The findings at autopsy confirmed the diagnosis of the chest condition but otherwise revealed nothing of note except in the heart, in which there were three chambers, two atria and one ventricle (cor biatriatum triloculare). The single ventricle, in which no trace of a septum could be found, communicated by a large tricuspid opening with the right atrium but no left atrioventricular opening was present. Leading from the common ventricle was a single arterial stem, guarded by three semilunar cusps, on the dorsal wall of which was a well-marked ridge. This ridge represented the septum which normally divides the truncus arteriosus into aorta and pulmonary artery. The pulmonary artery was here found to arise from the aorta on the right side of the septum; thus not only did this case show an undivided truncus arteriosus but the aorta and pulmonary artery as developed were transposed (fig. 1). The coronary arteries were derived from a single vessel which arose from the aorta some distance above the origin of the pulmonary artery and descended to the coronary sulcus alongside the truncus arteriosus.

The right atrium, which was of normal size, received the superior and inferior venæ cavæ and the coronary sinus, and communicated, as mentioned, with the common ventricle by a large tricuspid opening. This opening seemed identical with a normal right atrioventricular valve. The left atrium, also of normal size, received the four pulmonary veins, but no opening into the ventricle existed, there being complete atresia of the mitral valve. The interatrial septum presented a patent foramen ovale, 3 mm. by 1·5 mm., bounded by very clearly marked primary and secondary septa, and in addition a smaller foramen, 2 mm. in diameter, situated below the fossa ovalis (fig. 1). Numerous established cases of persistent ostium primum of Born were compared with this foramen but it does not appear to be an example of that condition;

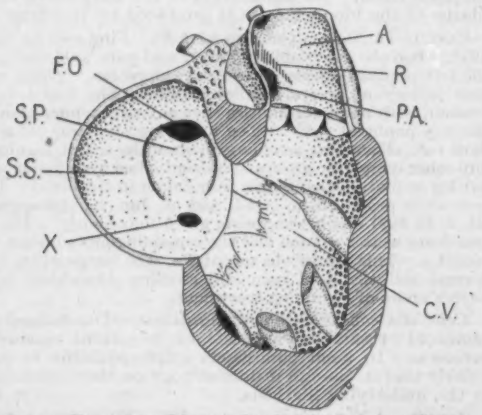


FIG. 1—Heart opened from in front; atrial septum shown from the right side. F.O. = foramen ovale; S.P. = septum primum; S.S. = septum secundum; X. = secondary foramen; A. = aorta; P.A. = pulmonary artery; C.V. = common ventricle; R. = ridge representing septum of truncus arteriosus.

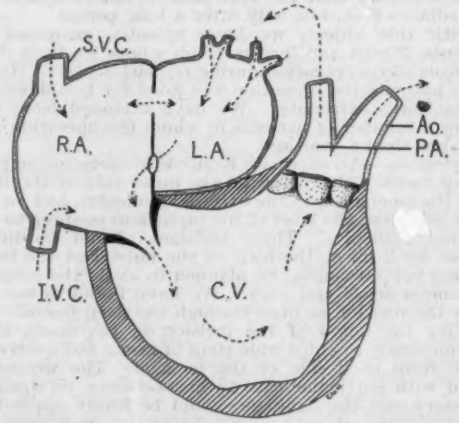


FIG. 2—Presumed circulation; in the atrial septum the foramen ovale is above and the secondary foramen below. S.V.C. = superior vena cava; I.V.C. = inferior vena cava; R.A. = right atrium; L.A. = left atrium; Ao. = aorta; P.A. = pulmonary artery; C.V. = common ventricle.

more likely it was secondarily produced by back pressure from the left atrium owing to the mitral atresia.

The circulation in this case must have been as represented in fig. 2 and that being so, survival for 3 months is remarkable.

I wish to thank Dr. Mary Stevenson, in whose wards in Stobhill Hospital, Glasgow, the patient was seen, and Prof. D. M. Blair for advice and criticism.

REFERENCES

Keith, A. (1909) *Lancet*, **2**, 359, 435 and 519.
Dudzus, M. (1922) *Virchows Arch.* **237**, 32.
McIntosh, C. A. (1926) *Amer. Heart J.* **1**, 735.
Abbott, M. E. (1936) Atlas of Congenital Cardiac Disease, New York.

Reviews of Books

Psychoanalytical Method and the Doctrine of Freud

ROLAND DALBIEZ, Dr. ès lettres. London: Longmans, Green and Co. Pp. 515 and 331. 2 vols. 40*s*.

To the people—many of whom are not psycho-analysts—who admire the lucidity of Freud's style it must come as a surprise that anyone should write two volumes because he finds Freud incapable of presenting his thought in a convincing form or of making a clear distinction between his method and his doctrine. In the first volume Dr. Dalbiez presents the theory of psycho-analysis, and in the second expresses his own views. He consistently points out the relations of Freud's views to those of other workers, and his approach is partly historical; thus he recalls the war waged by Hughlings Jackson and Head against the anatomical theories, and their insistence on the need to think physiologically; Freud showed that we must, in addition, think psychologically. Contemporary theories are also contrasted with those of Freud. Janet's view centred on the negative idea of deficiency, whereas Freud insisted on the positive idea of conflict, and he took up the neurological approach to hysteria at the point where Babinski left it. Since he is by training a philosopher, a pupil of Meyerson whose views are outlined in a discussion on the historical and scientific methods in psychology. Dr. Dalbiez regards psycho-analysis as a discipline not of the type of the sciences, which explain the particular by the general, but of the type which, like history, explain an event by an antecedent event. He does not consider psycho-analysis to be a philosophy in itself. His discussion of Pavlov's work in relation to Freudianism shows his original perspective: he concludes that the conditioned reflex can be regarded as a psychological concept and as such lends support to Freudian views on psychic mechanisms and their dynamic and unconscious nature.

Most critics of psycho-analysis, he considers, fail, like Freud himself, to distinguish between method and doctrine, and the whole first volume is merely preliminary to a chapter in the second volume where the associative method is thoroughly examined. He holds that the method, correctly applied, can produce scientifically accurate results, but he criticises the doctrine freely, and eventually concludes that the fundamental problems of the human soul are left untouched by psycho-analysis. He accepts, however, many points in the Freudian theory. Thus he agrees that infantile sexuality must be regarded as normal, and that there is a genetic link between this and the sexopathies; but he considers that Freud has failed to make the philosophical distinction between "accidental" and "essential." Thus for the polymorphic perversion attributed by Freud to the infant Dr. Dalbiez would substitute polymorphic pervertability. Elsewhere he points out the difficulty of accepting the Freudian theory of dreams.

In contrasting Bergson's theories of habit and memory with Freud's Dr. Dalbiez suggests new paths of inquiry. The part played by memory in the Freudian method would repay close attention, especially if the dynamic nature of memory was kept in mind. Plenty of clinical examples, drawn from various authors, are quoted in the two volumes. One or two assertions are based on insufficient evidence: thus Dr. Dalbiez accepts Peiron's claim, which would be questioned by most physiologists, that a toxic substance—hypnotoxin—can be demonstrated in the blood and cerebrospinal fluid. The work, however, is a brilliant example of Gallic logic and conciseness, and the translation is worthy of them.

Tropical Tips for Troops

Lieut.-Colonel E. T. BURKE, M.B. Glasg., officer commanding 40th Field Ambulance, XIII Division, 1914–19 in Gallipoli, Egypt, Mesopotamia, N. Persia, the Caucasus and Transcaspia. London: W. Heinemann Medical Books. Pp. 63. 2*s*. 6*d*.

Colonel Burke intended this small paper-backed booklet for the use of officers and men of our armies in those regions loosely called "the tropics"—regions which embrace, among others, parts of Europe, Egypt and the Near East, and South Africa, as well as the geographical tropics. The text is divided into five chapters advising on tropical kit, protection against the sun, tropical diseases, vermin and mental readjustment. There are one or two unexpected omissions; for example, the advantages of "long shorts" and of mosquito boots are not mentioned; while the recommendation to wear a cholera-belt may not find universal acceptance. In the second chapter, the malignancy of the tropical sun is perhaps overdrawn, but the chapter on tropical diseases contains much information of value to laymen. Bilharzia is not mentioned, though it is surely of even greater importance to troops in the field than plague, to which a section is devoted; relapsing fever—particularly the Central African variety—and its vectors might also have found a place. The chiggoe flea, too, is a minor parasite which may assume major importance in the military field; and a few words on ticks would round off the chapter on vermin. The section on mental readjustment contains much wisdom. This little volume should be of considerable value to those about to embark on military expeditions abroad, and it will be in large demand.

Modern Dermatology and Syphilology

S. WILLIAM BECKER, M.D., associate professor of dermatology and syphilology in the University of Chicago; and MAXIMILLIAN E. OBERMAYER, M.D., assistant professor of dermatology and syphilology in the university. London: J. B. Lippincott Co. Pp. 871. 65*s*.

THIS new textbook presents many original features. The paper and illustrations are excellent while the two columns of printing to a page are restful to the eye. The authors give their considered opinions in lecture form; inevitably the reader will disagree with some of these opinions, but he will find them far more stimulating than a dull recital of facts. References in the text are cut down to the minimum and an adequate bibliography is to be found at the end of each section. Plenty of space is given to treatment—which should appeal to the practitioner, who most often consults textbooks to find out what to do. No space is wasted on obsolete methods. In the treatment of syphilis, the recommendation that neoarsphenamine should be given every five days must be criticised. The seven-day interval has proved satisfactory and it is better for patients on a long course of treatment, particularly those attending clinics, to report at the same time each week; with five-day intervals treatment will periodically fall due at the week-end, and patients will tend to default at those times.

Year Book of Public Health, 1941

J. C. GEIGER, M.D., Dr.P.H., director of public health of San Francisco. Chicago: Year Book Publishers; London: H. K. Lewis and Co. Pp. 544. 15*s*.

THIS is one of a series of year books, on various departments of medicine, founded in 1900 and since continued annually. The present volume, without preface or introduction, deals with recent papers on a great variety of public-health subjects, each with a footnote by the editor. The matter is extracted mainly from current American publications, but due attention has been given to important contributions to British journals. The selection is guided by the importance of the papers to the progress of the science and practice of preventive medicine, with a bias towards those which throw light on controversial subjects or which raise new contentions. It is thus a valuable guide to the progress made in the past two years. Though in some places tinctured by American laws and methods, most parts of it will have equal value all over the globe. Of topical interest is the chapter on military hygiene, or more correctly war-time

hygiene, since in the present war problems are mainly connected with the civil population. The book should have special value to British medical practitioners who are finding that war-time restrictions on imported literature make it difficult to keep abreast of recent advances in knowledge.

Medical Societies

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the Section of Obstetrics on Oct. 17, with Mr. SETON PRINGLE in the chair, a presidential address on

Placental Infarcts

was read by Dr. N. M. FALKINER. He recalled the work published in 1914 by James Young, who accurately described the red infarct and drew attention to its association with eclampsia. Recently workers in America, especially Bartholomew and his colleagues, have revived Young's views. Careful examination of placentas from all toxæmic cases have resulted in the recognition of certain types of placental infarct in association with different clinical manifestations. It has been shown that placental infarcts of the more acute types are definitely associated with the toxæmias of pregnancy, and it is possible to predict the type of infarct that will be found in the placenta from the clinical history. With the experience of examining placentas as "unknowns," it has been possible to establish criteria for an exact classification of placental infarcts and their relation to toxæmia. Bartholomew has put forward hypotheses with regard to the significance of hypocholesterolæmia and hypothyroidism as predisposing to infarcts in the placenta. Young and Bartholomew agree as to the ætiological significance of the acute placental infarct in toxæmias, but differ in their interpretation of the causal factors producing these lesions. Dr. Falkiner showed sections from 20 cases of toxæmia of pregnancy and demonstrated the constant occurrence of acute infarcts in pre-eclampsia and eclampsia and that the older or more chronic infarcts are associated with nephritic toxæmias.

Dr. GIBBON FITZGIBBON said he had found a few infarcts, but had more or less discounted them as causative elements in the toxæmias of pregnancy.

Dr. BETHEL SOLOMONS urged that a series of placentas from normal cases should be compared with a series from toxæmia cases. He asked if autopsies have been done on cases where the uterus has been removed with the placenta in situ, for these might shed new light on the decidual circulation. The relation of infarcts, and a good or bad decidual circulation, to toxæmias is, he said, still an unsolved puzzle; the general belief is that when infarcts are present with good decidual circulation the toxæmia is more severe.

Dr. JOHN CUNNINGHAM referred to the great delicacy of the vessels in the placenta, and said that the rate of growth of these vessels is enormous. When growth is as rapid as this something is bound to go wrong sometimes, and this to some extent explains the development of infarcts. The most interesting question is whether the toxæmia is due to the infarct or the infarct due to the toxæmia. He personally thought that the infarct is due to the toxæmia. In cases of chronic nephritis and vascular hypertension it is not unreasonable to expect that the new blood-vessels in the placenta will be especially affected.

Prof. A. H. DAVIDSON thought the chief question was: does infarction come from the maternal circulation or from the fœtal circulation? He thought that it comes from the latter. During his time as master of the Rotunda Hospital a number of babies born of toxæmic mothers showed albuminuria, which suggested that they had nephritis.

Dr. R. M. CORBET said that if, as Bartholomew and his co-workers maintain, the fœtal vessels are primarily affected, there must be a hypercholesterolæmia in the fœtal circulation; the question might also be raised why the fœtus is not always affected to the same degree as the mother. Dr. Falkiner suggested that when the infarction is acute the whole cotyledon is involved. If this is so, the toxins liberated may not be absorbed by that cotyledon, but will be carried upwards in the maternal bloodstream to the subchorionic pool where there is little or no absorption, and thence into the general circulation, where they may be taken up by the maternal tissues before the blood returns to the placenta, hence leaving the fœtus unaffected.

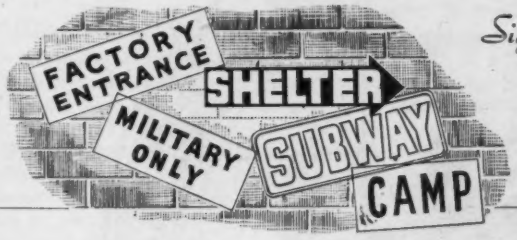
Dr. J. S. QUIN thought that if these lesions are the cause of the toxæmia the case of toxæmia from severe accidental hæmorrhage which Dr. Falkiner mentioned must demand another explanation. Whether the toxæmia is maternal or fœtal in origin, Dr. Falkiner considered considered that both the maternal and the fœtal circulations were involved. How does the separation of the placenta in these cases compare with the appearance of the infarcted areas in a recent infarction?

Dr. W. R. F. COLLIS had observed that in every case where there was toxæmia in the mother there was toxæmia in the baby as well. Wherever the toxin is it certainly gets into the fœtal circulation. He asked what is the mechanism of the actual thrombosis. Is it fœtal or maternal?

In his reply Dr. FALKINER said that this work is still going on. The decidua had not been examined in any case. It is very difficult to examine the decidua in the placental circulation. There are reasons to back up the view that disturbance of the maternal circulation will cause infarction. The greater proportion of patients who develop sugar in the urine during pregnancy develop albuminuria.

AMERICAN UNIT AT WORK

THE American Red Cross Harvard field hospital unit, planned for the investigation and treatment of infectious diseases under war-time conditions, is now at work. Soon after war broke out Harvard University offered to send a field and laboratory unit to England to study epidemiological problems. The offer was accepted, and in August, 1940, Prof. J. E. Gordon of the Harvard medical school came here to confer on the details of organisation. It was decided that a hospital should be included, and at the invitation of Harvard the American Red Cross agreed to provide hospital buildings and equipment and recruit nursing and administrative staff. To assemble personnel and equipment and move them across the Atlantic naturally took time. Now, however, a year after the development of the plan, transport of equipment and staff has been completed and the construction work is nearly done. There are twenty-two buildings, connected by covered walks, each building having its own oil-burning central-heating system. Beds are provided for 125 patients, over 40% of them in single rooms, the remainder in two-bed rooms. The hospital is affiliated with the Emergency Medical Service, and receives both military and civil patients. One building is especially designed for admitting and discharging of patients; new arrivals are examined and in some instances treated in this building before being transferred to a bed in the main hospital. Those ready to be discharged are brought back to this building for tub bath and return of clothing. In other buildings are staff quarters, laboratories, operating-theatre, X ray, laundry, kitchen, dining-room, store-rooms, garage, offices and recreation-rooms. The laboratories are well equipped for diagnostic procedures and research in infectious disease. Personnel brought from America includes 60 nurses, 8 physicians, 6 laboratory technicians, 3 secretaries, a hospital superintendent, a dietitian and a chef. Other employees are British. The aim of the unit is to attack problems of infectious disease by mean sof field study, laboratory investigation and clinical observations. Field units consisting of physicians, technicians and public health nurses will be available for work in any part of Britain. Cars and other equipment for mobile operations have been provided. These units are being used to supplement local health organisations in times of need, and such help will be welcome now when local agencies are often reduced in staff and burdened with extra war duties. So far as is practical the base will be used by the field unit for laboratory work and for supplies. Actual projects in which the unit is engaged must of course depend largely on circumstances, but infections of the central nervous system and the pneumonias are special interests of members of the staff.



Signs of the times

An increasing tendency towards skin ailments arises from the present-day conditions of public crowding.

STREPTOCIDE OINTMENT

THIS preparation contains, in solution, 5 per cent. Streptocide (Sulphanilamide Evans). It is non-toxic and can be employed over extensive areas. Streptocide Ointment was clinically tested prior to release for general sale. Medical Practitioners, Public Health Depts. and Hospitals in the principal countries of the world have since testified to its value in the treatment of numerous troublesome skin conditions. The wide application of Streptocide Ointment is indicated by reports received of its use in the stated conditions.

CELLULITIS
CHRONIC ULCERATION
CYTOLYSIS
ECZEMA
EMPYEMATOUS SINUS
ERYSIPELAS
IMPETIGO
INFECTED WOUNDS
POST-SCARLATINAL RASHES
VARICOSE ULCERS
WHITLOW

STREPTOCIDE CREAM

Streptocide is also issued in the form of a non-greasy cream, which is specially recommended in acute inflammatory conditions when rapid absorption of the drug is desired.

PRICES AND PACKAGES

OINTMENT	CREAM
Containers of 2 oz. - 2/6d.	Containers of 2 oz. - 2/9d.
Containers of 1 lb. - 14/6d.	Containers of 13 oz. - 14/6d.

Prices apply to Gt. Britain and N. Ireland, are subject to the usual discounts.

Samples and literature will be sent on application to Home Medical Dept., Royal Liver Building, Liverpool, 3.

PRODUCTS OF

MEDICAL RESEARCH EVANS

Carried out at The Evans Biological Institute by

EVANS SONS LESCHER AND WEBB LTD · LIVERPOOL AND LONDON

M.12

EIGHT ADVANTAGES

'Mapharside' (meta-amino-para-hydroxy-phenyl-arsine oxide hydrochloride) is a potent spirochæticide, possessing the following advantages in the treatment of syphilis:

1. It is a compound of definite chemical composition prepared as a practically pure substance.
2. It possesses a relatively constant parasiticidal value.
3. It does not require neutralization before administration; it is ready for injection when dissolved in distilled water.
4. Its solutions do not become more toxic on standing.
5. It is therapeutically effective in a dosage approximately one-tenth that of arsphenamine.
6. Reactions following its use have on the whole been less severe than those observed after treatment with arsphenamine and neoarsphenamine.
7. The healing of lesions and the disappearance of spirochætes occur rapidly.
8. Each batch is chemically and biologically assayed before release.

In ampoules of 0·04 *gm. and* 0·06 *gm.*

PARKE, DAVIS & CO., LONDON, W.1

MAPHARSIDE

An Improved Arsenical

THE LANCET

LONDON: SATURDAY, NOVEMBER 29, 1941

TYPHUS IMMUNISATION

THE war has now entered countries where exanthematic typhus is both endemic and epidemic and where frequent and efficient delousing will be difficult if not impossible to carry out. Typhus is endemic on the Russian front from the Caucasus to Finland, although epidemic proportions have not yet been reached. Much of the disease described in the English newspapers as typhus is undoubtedly typhoid, which in German is known as typhus abdominalis. Nevertheless there seems to be an urgent need for effective immunisation if the history of the Serbian army in the last war is not to be repeated. On a later page will be found a note on the precautions regarded by the Ministry of Health as essential should infected lice reach this country.

Unfortunately little is yet known about typhus immunisation on a large scale. The only vaccine which has been in use for any considerable time is that of WEIGL. This is made from the intestines of lice infected with typhus rickettsiæ inoculated per rectum. Three to four injections of the vaccine are necessary to produce immunity while some hundreds of lice are required for the immunisation of one person. Apart from the delicate technique of rectal injection this method therefore requires a large staff of immunes on whom the lice can be nourished. It is thus hardly practical unless a whole institute is devoted solely to the manufacture of the vaccine, as was done at Lwow under the direction of Professor WEIGL. It is known that WEIGL remained when the Russians occupied this town in 1939 but nothing has been heard of his fate and that of his institute since the beginning of the Russo-German conflict. The only other method of immunisation used on a large scale has been the injection of living murine typhus rickettsiæ in Morocco and Tunis. These rickettsiæ, when living, undoubtedly immunise against exanthematic typhus but often at the expense of an attack of murine typhus which though not so deadly as the exanthematic form is not to be despised. The use of living murine rickettsiæ as a vaccine is also contra-indicated in countries where lice are widely distributed in the population, for then the stage is set for the possible conversion of murine into exanthematic typhus rickettsiæ by passage through the louse. The possibility of using killed murine typhus rickettsiæ has been envisaged by RUIZ CASTANEDA,[1] who finds that in guineapigs multiple doses do produce some immunity. On another page Dr. G. M. FINDLAY shows from personal experience that the converse is also to some extent true, and that at any rate a partial immunity is produced in man against murine typhus by killed exanthematic typhus rickettsiæ. In dealing with exanthematic typhus, however, it seems far better to employ the killed homologous rickettsiæ, provided these can be obtained in sufficient quantities. Two methods have recently been put forward for obtaining antigenically rich vaccines of exanthematic typhus rickettsiæ. COX[2] has injected rickettsiæ into the yolk sacs of developing chick embryos while DURAND and GIROUD[3] have instilled rickettsiæ intranasally into mice. From the yolk sac or the mouse lung, after treatment with formalin or phenol, vaccines may be obtained containing very large amounts of killed rickettsiæ. To confer immunity, however, it seems essential to give four or five injections. Both these vaccines have been employed on a small scale in man but their actual value as immunising agents is at present unknown. Cox's egg-yolk vaccine was employed during the recent small epidemic in Spain but the results are as yet unpublished. It is known that laboratory workers who have been immunised by the egg-yolk vaccine have subsequently become infected with exanthematic typhus; in these cases of course there was probably a more intense infection and a longer exposure than is likely to occur under conditions in the field. A drawback to the use of the mouse lung vaccine is obviously the possibility that other viruses present in the mouse lung may remain active in the presence of the disinfectant employed. This possibility may be reduced by employing special laboratory-bred strains of mice.

Before typhus immunisation is attempted on a large scale in the field certain fundamental questions must be answered—what is the minimum number of injections that produces immunity and the length of time for which immunity persists, and what are the keeping properties of the vaccine? In immunising large numbers of people it is not easy to ensure that all receive four or five injections at intervals of 5–7 days, so that if possible the number of injections should be reduced to one or two. In regard to the duration of immunity it is known that with Weigl's louse vaccine, as with the tick vaccine prepared against Rocky Mountain spotted fever, reinoculation every year is essential. Incidentally in testing immunity reliance should not be placed solely on the Weil-Felix reaction; the agglutination test and the demonstration of rickettsicidal antibodies by the intradermal injection in rabbits, as devised by GIROUD,[4] should also be employed. Finally there is already evidence that after 5–6 months in the ice-chest both Weigl's vaccine and the mouse-lung vaccine lose much of their antigenic power. Presumably if kept at room temperatures their loss of antigenicity would be even more rapid.

INDUSTRY'S CLAIM ON MEDICINE

"THE months that lie immediately before us," says the Minister of Labour, "will be as crucial a period as that of the Battle of Britain," and he has appealed to industry to increase its output by 30 or 40 per cent. His appeal is a challenge to the medical profession, and in particular to those doctors who having appointments in factories can help to ensure optimum effort. The question of optimum hours, Mr. BEVIN has said, is not so much one of bargaining between trade-unions and employers as one demanding a scientific approach which takes account of all the factors involved at any given time and recognises the need for adjustment as those factors change. Surely one scientific approach

1. Ruiz Castaneda, M. *Brit. J. exp. Path.* 1941, **22**, 167.

2. Cox, H. R. *Publ. Hlth Rep. Wash.* 1938, **53**, 2241.
3. Durand, P. and Giroud, P. *Arch. Inst. Pasteur Tunis*, 1940, **29**, 25, 234.
4. *Bull. Soc. Path. exot.* 1938, **29**, 25; **31**, 245.

must be that of medicine as a whole, the combined wisdom of all who have the privilege of supervising the health of the workers. The effects of abnormal hours on health are known; they have just been set out[1] again with authority by a select committee, but we need more observations on the effects of different work spells. Admittedly, excessive overtime for a long period has a devastating effect on the human reserve of strength, both physical and mental. Over short spells of a month or two, or even three as after Dunkirk, effort can be greatly intensified without collapse. But over six months, the precise period mentioned by Mr. BEVIN, it would be folly to drive factory workers blindly, without regard to rest and recreation. Production is by no means directly proportional to the number of hours worked; the optimum hours for regular output are far less than those which can be maintained in a spurt. The problem with which we are faced is to find the correct work spell for each group of workers, for each gang, for each process, for each department, and for each firm. Fatigue, that scientifically vague yet expressive word used to sum up the results of overwork, can at present only be measured in terms of output; if fatigue appears in the individual, in the squad, in the gang, in the shop, then production falls. And because fatigue is cumulative it follows that the national effort must decline if the rules so truly laid down by the Health of Munition Workers Committee in the last war, and amply confirmed by later experience, are not applied by those in authority.

How is this to be done? The first step is to apply existing knowledge and this is now, we are assured, the firm intention of the Government as stated in the report mentioned above and summarised last week in these columns (p. 648). No longer is the accumulated wisdom of the Industrial Health Research Board and its forerunners in regard to the relation of working hours to output, tested again and again and proved right every time, to be set aside by the producing departments. Patriotism is not enough; we can be ruthless with materials but not with the human tools that fashion them. To ensure the perfect adaptation of workers to their work would no doubt require an industrial medical service with a code and practice as elaborate as (say) that of the school medical service. But, as the B.M.A. report[2] published today insists, an adequate medical service does not necessarily involve an elaborate and expensive organisation. Last year's order of the Ministry of Labour paved the way by giving the Factory Inspectorate discretion to introduce doctors, nurses and welfare officers into any factory engaged on armament work. There should be, says this report, in *every* factory, large or small, arrangements for the medical supervision of the workers. Before the war there were in this country some 520 factories employing a thousand or more workpeople, and 137,000 employing less than 250. It should be possible for a group of smaller firms to coöperate in appointing a medical officer who will spend his whole time in industrial medical work; and there is much to be said for having some advisory body to help the employer get the kind of medical officer who can safely be given a free hand when appointed. The proper placing of workers according to their fitness, their continued supervision under working conditions after return from illness, study of the occupational hazards and the best way to meet them, a careful watch on the beginnings of psychoneuroses—these form the background of a job which might well become as attractive as that of the public-school famulus. And to become this the works medical officer must be left to develop his style unhindered, with direct access to the management when he needs it. The Association of Industrial Medical Officers has also devised a training scheme which it regards as practicable even in war-time, by which special university committees, including doctors, employers and trade-union officials shall arrange courses in industrial medicine and obtain facilities for entry into all kinds of factories. Actually the interest of the general practitioner in the subject is being much quickened these days and there is a good prospect, if the war goes on long enough, of the doctor regaining the intimate knowledge of his patients' daily lives that he lost when they entered the erstwhile gloomy portals of the factory. This new awareness will provide the clue to the "research" which is regarded as something apart and out of the question at present. Its essential basis will be what industrial life looks like to doctors who move freely within it.

1. Statement relating to Production, being the 25th report of the Select Committee on National Expenditure. H.M. Stat. Office. 6*d*.
2. Report of Committee on Industrial Health in Factories. B.M.A. House. Pp. 43. 6*d*.

PHOTOGRAPHY THROUGH THE PERITONEOSCOPE

As early as 1901 the abdominal viscera of a dog were seen through a cystoscope introduced into a pneumoperitoneum. Since then the peritoneoscope has been much improved, and the latest triumph is the perfection of a method of colour photography which makes it possible to attach a coloured picture of his abdominal organs to the patient's clinical notes. Yet the enthusiasts for peritoneoscopy are still few, and there seem to be three reasons for this lack of favour: the procedure may be accounted unsafe; its scope may be too limited; or the alternative (usually exploratory laparotomy) may be considered so much more satisfactory that any added risk is considered worth while. From published accounts the dangers of peritoneoscopy do not seem alarming. GARREY[1] has reported 75 peritoneoscopies without a complication, except for slight sepsis in the abdominal wall of one case. His patients were, on an average, 36 hours in hospital. He discusses the experience of other observers, notably of RUDDOCK, who has completed 1500 examinations, and concludes that peritoneoscopy has only a fraction of the mortality of laparotomy, while it saves money and hospital beds. The first part of the operation is the induction of a pneumoperitoneum. An area in the midline of the abdominal wall about 5 cm. across, just below the umbilicus, is anæsthetised by procaine infiltration. An incision 1·5 cm. long is made through the skin, and a small blunt trocar and cannula are inserted through which the pneumoperitoneum is induced. The larger cannula which is to act as the sheath for the optical instrument is introduced through a nick in the anterior fascia. GARREY gives as the essentials for the patient's comfort during the procedure gentleness in all movements—no jolting and no touching of visceral surfaces by the instrument. He

1. Garrey, W. E. *New Engl. J. Med.* 1941, **225**, 180.

also exercises great care in anæsthetising the parietal peritoneum. Intra-abdominal photography, described by HORAN and EDDY,[2] is also done under local anæsthesia. A conscious patient is almost an essential, for during the exposure the breath has to be held. The main obstacle encountered at the outset was that the lamp supplied with the peritoneoscope was an insufficient source of light, so that a very small lamp with a very powerful beam had to be invented. According to present technique this lamp must be introduced through a separate peritoneal opening, but a trocar is being designed which will carry both peritoneoscope and light-carrier through two air-locks.

The value of peritoneoscopy depends on the possibilities of extending its scope. Up to now it has been useful in the differential diagnosis of liver diseases, in deciding whether or not to operate in cases in which secondary malignant growth is suspected and in determining the nature of pelvic tumours. The parts of the abdominal cavity readily seen are the under surface and anterior border of the liver, and, by tilting the patient into the Trendelenburg position, the upper surfaces of the pelvic organs; between these two regions the intestines get in the way. In obscure cases of jaundice it has been possible to diagnose with certainty cirrhosis, syphilis and secondary deposits in the liver. An enlarged gall-bladder may be clearly seen, but the pancreas is not in sight. Tuberculous peritonitis has been correctly diagnosed, and biopsies of the omentum and of the liver have given valuable information. Fibroids and ovarian cysts are readily demonstrated. The differential diagnosis of ascites can be made. Early leaking of blood from an ectopic pregnancy gives an unmistakable picture. The advocates of peritoneoscopy say they have been able to save unnecessary laparotomies and give material aid in arriving at a prognosis in difficult cases. They do not claim that this is an infallible method of diagnosis, and in fact have found it of most aid in confirming a diagnosis already strongly suspected. The question remains whether surgeons in this country will think the risk and inconvenience of an exploratory laparotomy sufficient to make them adopt this alternative.

2. Horan, T. N. and Eddy, C. G. *Surg. Gynec. Obstet.* 1941, **73**, 273.

Annotations

BACTERIA IN DISTILLED WATER

IT is important at any time to have reliable standards when assessing the bacterial content of water, and in war-time, when supplies may be contaminated, such standards need to be especially trustworthy. Bigger and Nelson[1] have cleared up some doubts about the significance of variations in coliform-bacillary counts, and have called attention to fallacies in methods of filtration. Though their experiments were primarily concerned with the technique of water examination, their findings have a direct bearing on everyday medicine. Thus they note that water which is pure in other respects may acquire from rubber tubing, corks or filters traces of powdered talc, asbestos, silica or other earthy matters; and though these may be sterile and protein-free their presence makes it possible for bacteria to grow in the water as soon as it comes into contact with air. These solids do not form the nourishment of the organisms, which live, it seems, on carbon dioxide, traces of ammonia and perhaps other minor gaseous constituents of air. The action of the siliceous particles appears to be catalytic; in their presence distilled water—which normally will not permit contaminating coliform bacilli to multiply—becomes strongly favourable to their growth. This finding throws light on the work of Knott and Leibel,[2] who reviewed the factors inducing pyrogenic properties in fresh and stored distilled waters used to prepare solutions for intravenous injection. Their experience suggested that a reaction in the patient was more likely to be provoked by traces of protein (often bacterial in origin and detectable by a rise in albuminoid ammonia) than by particulate or inorganic matter. Yet they remarked that it was a commonplace of the preparation room that solutions showing inorganic deposits were very liable to prove pyrogenic, and if such reactions were to be avoided deposits of any kind were inadmissible. The work of Bigger and Nelson seems to bring these apparently conflicting experiences into line. In the absence of siliceous matter, bacterial contamination of doubly distilled water is not followed by growth of organisms; but if sufficient particles of silicate are present multiplication begins even at room temperature. Both factors are thus necessary, but neither the initial contamination nor the number of particles present need be large for organisms to grow. Thus small lapses from technical perfection may produce serious and far-reaching pyrogenic results. No special silicate and no particular contaminating organism can be held responsible; Bigger and Nelson produced the same results with various silicates and with most of the common coliform organisms and their variants. It is thus unnecessary to postulate a special strain of "distilled water bacillus," as once was the fashion, or to blame a particular bit of the customary apparatus. Those charged with the preparation and care of intravenous supplies must beware of traces of catalytic silicate and of the chance coliform contaminant.

1. Bigger, J. W. and Nelson, J. H. *J. Path. Bact.* 1941, **53**, 189.
2. Knott, F. A. and Leibel, B. *Lancet*, 1941, **1**, 409.

CATGUT SUTURES

CATGUT has been employed for the ligature of vessels since the time of Galen; it was not until last century that it came into use as a suture material. Since then it has been almost universally adopted, for its qualities conform closely to those of the ideal suture, but it has to be used with discrimination. Howes[1] points out that catgut is a foreign body and excites a tissue reaction which is sometimes accompanied by infection, particularly when it is used in the skin and mucous membranes. Apparently catgut encourages infection by acting as a culture medium. It is also not well tolerated by muscle and in fat, where the poor blood-supply is probably responsible for a low-grade inflammatory reaction with considerable necrosis and induration. To minimise the risk of infection and the foreign-body tissue reaction, Howes advocates the employment of catgut in fine sizes arguing that in any case the strength of a sutured wound is limited by the power of the tissues to retain the suture. The tensile strength of chromic catgut no. 1 is about ten times that of aponeurotic tissue. To employ such a size is clearly unnecessary, although allowance must be made for the weakening of the thread from absorption, its tensile strength being probably reduced by half four days after insertion. Howes suggests that no size greater than no. 0 is needed in suturing any tissue and that much finer gauges (0000 or even 00000) should be used in tissues which have a poor holding power for catgut. If additional strength seems necessary he advises a larger number of interrupted sutures, although he points out that there is no advantage to be gained by placing them closer together than 1 cm. Bowen[2] says that larger

1. Howes, E. L. *Surg. Gynec. Obstet.* 1941, **73**, 319.
2. Bowen, A. *Amer. J. Surg.* 1940, **47**, 3.

sizes of catgut are actually digested more rapidly and lose their thread strength earlier than finer ones, because of the greater tissue reaction produced by the larger sizes and the more certain impregnation of the smaller gauges of chromic catgut during manufacture. Howes maintains that the incidence of wound infection is reduced and healing hastened by paying attention to these points. These views are supported by previous experimental work. Bates [3] points out that the edges of a healthy wound do not adhere firmly for the first four days but thereafter the strength of the junction rapidly increases until by the tenth day it approaches normal. The ideal suture must therefore retain its strength during the first ten days of healing. Bates's experimental studies showed that the finer sizes of chromic catgut (000) retained an adequate tensile strength for a fortnight, and that healing was rapid when they were used, whereas larger sizes (3) had little to do after a week, although the wounds were poorly healed even at this stage. Plain catgut of all sizes was even more rapidly absorbed and accompanied by inflammatory reaction and delayed healing. Bower, Burns and Mengle,[4] from experimental work on dogs, reached similar conclusions regarding the healing of intestinal wounds and laparotomy incisions. They have applied their experimental findings clinically with success. Unabsorbable suture materials have been growing in popularity in recent years, particularly in America. Those who advocate their use have emphasised the disadvantages of catgut. Whipple [5] points out that among the factors influencing wound healing the use of fine needles and sutures is important, in order to avoid trauma and foreign-body tissue reaction. He therefore advocates the employment of silk, but it seems that when catgut is used in suitable sizes most of the objections to it disappear.

VAGINAL EXAMINATION DURING LABOUR

So much has been written about the potential dangers of making a vaginal examination during labour that in the ranks of the extremely cautious this procedure has been totally vetoed and replaced by the routine employment of the rectal route for diagnosis and prognosis. A vaginal examination in labour undoubtedly carries with it a small but ever present risk of introducing infection from the perinæum and the lower reaches of the vagina into the cervix and uterus or further; such an infection may be endogenous from the patient herself or exogenous from the examiner's hand or person, especially his nasopharynx. Whatever precautions are taken there still remains a small risk. Such precautions include the intelligent use of an impervious mask to cover mouth and nostrils, the exclusion from the labour ward of all personnel harbouring any form of nasopharyngeal infection, however mild, not forgetting the common cold and the seasonal sore throat, the employment of complete surgical asepsis for the examining hand and the use of a dry sterilised glove, careful toilet of the area of examination, and the generous exhibition of some reliable antiseptic, such as Dettol cream. If all these precautions are faithfully observed we have at least given as few hostages to fortune as we can. But the determining factor is not only the method but still more the number of examinations. One or two vaginal examinations carry but a small risk, but every repetition increases the danger, especially if the repetition involves a number of different people, such as the outside practitioner, the admitting midwife, the pupil midwife or medical student, the resident house-surgeon and perhaps as a final court of appeal the consultant. These multiple vaginal examinations constitute a real danger and should always be discouraged, since universally accepted figures show that the morbidity-rate rises in direct proportion to the number of antepartum examinations, and moreover it is a contra-indication to cæsarean section should this be ultimately advisable.

On the other hand, there is no doubt that vaginal examination is the only certain method of exactly assessing the degree of dilatation of the os in difficult cases—for example, when the presenting part is covered by a thin membrane of undilated cervix and yet full dilatation is diagnosed on rectal examination. It is also the only accurate way of diagnosing the presentation when this is masked by œdema of the presenting part and the rectal findings are equivocal. The enthusiastic supporters of the rectal route claim that as much information can be obtained by this as by vaginal examination, but they admit that practice and experience are essential, and they are mostly prepared to resort to vaginal examination when in difficulty or doubt. The dangers of the rectal approach are that it leads to a sense of false security and therefore too frequent employment by too many different people on any one case. Masks and antiseptics are apt to be neglected and the very method of examining the rectum readily becomes haphazard; thus the inadequately sterilised thumb may be placed on the introitus. Erving and Meister [1] ask whether a finger in the rectum which rubs the surgically dirty posterior vaginal wall into the cervix and over the presenting part is any less risky than a properly and carefully performed vaginal examination. They support the limited use of the vaginal route with some convincing figures. In 1000 cases consecutively delivered in the maternity unit of the Millard Fillmore Hospital, Buffalo, 97·5% of whom were examined vaginally an average of 1·4 times, there were no maternal deaths, and the corrected fœtal mortality was 2·7%; 4·5% of the mothers were febrile according to the League of Nations standard. In extenuation of even this small morbidity-rate, it must be noted that Erving and Meister's cases were largely complicated and 75% were delivered operatively, a fact which in itself accounts for any sepsis. The conclusion to be drawn is that a carefully conducted vaginal examination, done once or twice only, is no more dangerous than a rectal examination, while its diagnostic exactitude renders it greatly preferable.

WHY DO MEN MAKE WAR?

WAR, says Mr. D. W. Harding in "The Impulse to Dominate" (London: Allen and Unwin. Pp. 256. 7s. 6d.) is a social institution, sanctioned alike by the aggressor nations and ourselves. During the quiet periods between wars the ordinary citizen has no desire for war, but he has acquiesced in the principle of domination or submission as the rule in private life and confronted with dominant intentions on the other side (as the citizens on both sides feel sure they are) he can see nothing for it but resistance. Now come in all kinds of exacerbating influences: innate aggressive impulses; propaganda; and rumour—directed or spontaneous—aided by that process of rationalisation which leads even the most intelligent to manufacture reasons for their emotional responses, and by the citizen's dim understanding of international affairs. The author notes the view that psychological theory belittles efforts to exclude war; but he maintains that the human nature we know is institutionalised human nature, not the biological product that an uncritical reading of psycho-analysis would suggest. If the psycho-analytic view is correct it means that the emotions leading to war are "neurotic," for the greater the influence of repressed impulses in determining behaviour the more neurotic it is.

Mr. Harding seems to put his finger on the primary knot in this tangle when he writes: "The early family

3. Bates, R. R. *Ibid*, 1939, **43**, 702.
4. Bower, J. O., Burns, J. C. and Mengle, H. A. *Ibid*, 1940, **47**, 20.
5. Whipple, A. O. *Surg. Gynec. Obstet.* 1939, **69**, *Internat. Abstr. Surg.* 109.

1. Erving, H. W. and Meister, E. F. *Amer. J. Obstet. Gynec.* 1941, **42**, 326.

situation must be the means by which society perpetuates its typical patterns, the means by which it forms a closed circuit and precludes criticism of its basic assumptions"; and one of these assumptions is the validity of the institution of war as a means of settling differences between states. No scientific view of war, says he, can undermine our conviction of being morally justified when we fight against wrongful aggression, just as we need not doubt our moral right to defend ourselves or our law-abiding neighbours against robbery with violence even though a detailed analysis may convince us that our established institutions are responsible for producing criminals. In a now forgotten book "The Science of Power" Benjamin Kidd showed how our social institutions depended upon a social heredity, and although stable through the centuries are capable of rapid and radical change which can be consciously directed. Mr. Harding indicates means by which our social heredity could be altered towards integration. An international authority to enforce peace, he points out, is domination on the grand scale. He would have us recognise that dominant behaviour is an institution which our culture has devised and perpetuated just as the neurotic person has created his incapacitating illness. Prophylaxis must depend on psychological security for the individual and elimination of those family and social traditions which preclude criticism of society's basic assumptions. The first requirement could partially be met by sociological changes; the second, he thinks, calls for a widespread application of individual analysis, particularly of child analysis. The proposition thus to alter our social life is alarming, he admits; our impulse is to take a firmer clutch on what we already have, even though what we already have includes war. A similar reaction of insecurity to any invitation to change, even in small matters, stands in the way of all integrative behaviour.

This summary of his views cannot do justice to the balance of the book, or to its careful study of the mental processes involved in the warlike spirit. To follow the author all the way, however, would call for a detachment which few of us can achieve in these times, though perhaps the Chinese could approach it. Their custom of allowing a defeated enemy to save his face is fundamentally sound, rooted in common sense. But to put down Mr. Harding's book and pick up a daily paper is to pass into another world not to be measured by his standards and values. All the more satisfying is it that such a work can be published at this stage. Whether the author's conclusions are right or wrong, the mood in which he handles this, the most pressing problem mankind has ever faced, is the only one reaching towards a solution.

FUNCTION OF THE TRIGONAL MUSCLE

THE trigonal muscle of the human bladder is made up of two parts—Mercier's bar and Bell's muscles. Macleod,[1] in considering their function, correlates their hypertrophy with various pathological findings. The principal functions of the muscle as a whole in relation to micturition appear to be to straighten out and eliminate the urethral angulation; to form a smooth channel leading towards and into the urethra; and to maintain this smooth passage-way, especially towards the end of micturition. The two parts of the muscle, according to Macleod, become hypertrophied under different circumstances—the interureteric bar, when there is extra-vesical obstruction, such as a urethral stricture, and Bell's muscles in the presence of a prostatic projection or a stenosis of the bladder neck. The hypertrophy of Bell's muscles in such conditions is explained by the fact that they have increased work to do to provide a smooth gully along which the urine may run. Macleod's findings are derived from cystoscopic examinations and post-mortem observations. The observation that the interureteric bar is thickened in cases of extra-vesical obstruction has a special interest since it runs counter to the opinion of Frontz and Landes, who hold that the bar is not thickened in cases of urethral stricture. Macleod also throws light on the working of the trigonal muscle. According to him, the interureteric bar prevents encroachment of the bladder mucosa on the smooth surface of the muscle when the bladder is nearly empty.

1. Macleod, D. *Brit. J. Urol.* September, 1941, p. 135.

EXPECTORANTS

AT this time of the year, shrouded in November fog, our island home becomes once again a land flowing with ipecac and ammon. carb. The use of expectorants "to increase and liquefy" the sputum is firmly established by tradition, and the futility of medical treatment—as distinct from skilled nursing—in the management of exacerbations of chronic bronchitis is probably the main reason for the routine prescribing of these drugs; it is not that they have been proved to be of value, but that they are as good a placebo as anything else. The physiological basis for the use of expectorants is perfectly sound: the output of secretion from the bronchial mucosa can be increased by vagal stimulation, and the same effect can be produced reflexly by irritating the vagus endings in the stomach mechanically or by means of drugs. It is well known that nausea and vomiting due to gastric irritation are accompanied by increased bronchial and salivary secretion and not infrequently a cold sweat provides additional evidence that the enhanced activity of the cholinergic fibres has spread far afield in the vegetative nervous system. But no convincing evidence has yet been produced to show that these physiological observations can be usefully applied in therapeutics. The only exception to this is that emetics are occasionally administered to children suffering from acute bronchitis in order to promote transient bronchorrœa with the object of flushing viscid secretion from the respiratory tract. Few indeed are the patients with chronic bronchitis who would submit frequently to the depressing experience of parting with their gastric contents in exchange for the fleeting and sickly pleasures of profuse expectoration. Nevertheless, it was probably the efficacy of this form of treatment in children which led to the unjustifiable assumption that subemetic and even subnauseating doses of drugs of the ipecacuanha series would produce the same effects on the bronchial secretion as emetic doses. It is remarkable that so little attention has been paid to the time of administration of expectorants in relation to meals. Only a small minority of people experience nausea when they take average therapeutic doses of these drugs on an empty stomach, and it therefore seems highly improbable that such doses can excite reflex effects by stimulating the gastric mucosa when the interior of the stomach is protected by foodstuffs and the mucoprotein of the gastric juice. By clinical observations on patients suffering from chronic bronchitis, Alstead[1] has shown that no significant change occurs in the output of sputum when patients receive maximum therapeutic doses of the expectorants in common use. Perry and Boyd,[2] by experiments on rabbits and cats, have confirmed Alstead's findings, in so far as it is possible to apply to man observations made on animals. Using a dose of ammonium chloride corresponding on a body-weight basis to that of Alstead, they could detect no increased output of respiratory-tract fluid. This is particularly interesting in view of the substantial dosage of ammonium chloride which Alstead's patients received—gr. 80 daily. The rest of the paper by Perry and Boyd will make a stronger appeal to the pure experimentalist than to the practising doctor, for the doses of the drugs under investigation were so large that the results cannot be applied to man. Thus an

1. Alstead, S. *Lancet*, 1939, **2**, 932; 1941, **1**, 308.
2. Perry, W. F. and Boyd, E. M. *J. Pharmacol.* 1941, **73**, 65.

increase in bronchial-tract secretion was reported in rabbits when the animals received a gramme of powdered ipecacuanha per kilo body-weight. On this basis, a man weighing 75 kg. would get a dose of 75 g. (gr. 1125) of the drug, which is 562 times the maximum pharmacopœial dose of powdered ipecacuanha, and equivalent to 2½ pints of the tincture. When it is recalled that a wine-glassful of tincture of ipecacuanha administered to the human subject almost invariably results in vomiting accompanied by bronchorrhœa, salivation and sweating, the only conclusion that can be drawn from the experiments reported by Perry and Boyd is that rabbits and cats are extraordinarily tolerant of this and other emetics. No reference is made to the occurrence of vomiting among the cats, but the passiveness of the rabbits is partly accounted for by the inability of these rodents to vomit. There is, of course, the additional factor that all of the animals were under a general anæsthetic during the experiments We are not likely to make much progress in investigating the clinical value of expectorants if research is carried out on laboratory animals instead of patients with respiratory diseases. The physician who is in daily contact with his patients is soon made to realise that he must concern himself only with subnauseating doses of expectorants. Measurement of the output of sputum in wide graduated test-tubes does not entail much trouble and is sufficiently reliable if the intelligent coöperation of the patient can be relied on. Bronchial fistulæ discharging measurable amounts of secretion from the respiratory tract would provide excellent experimental conditions, and the opportunities offered by patients suffering from gunshot wounds of the chest should be seized in order to throw more light on the efficacy of expectorants.

RUBBER DERMATITIS

RUBBER is a popular constituent of footgear because of its hard wearing properties, its cheapness and the protection it offers against damp. Some people, however, may become hypersensitive to rubber, responding with dermatitis of the feet to the use of rubber-soled shoes, or even shoes in which the insole has been impregnated with rubber. This hypersensitivity has long been recognised, since dermatitis is specially prevalent in the rubber trade. P. V. Marcussen, who has carried out an investigation[1] in Denmark, recalls recent work showing that the chemical accelerators used in the hot vulcanisation of rubber may be responsible for such sensitisation; and mentions the finding of P. Bonnevie that in a series of factory cases the accelerator causing the trouble was invariably mercaptobenzothiazol. Marcussen himself tested for rubber sensitivity all cases of dermatitis of the feet attending the skin department of the Copenhagen Finsen Institute over a period of 5 months. The patients were first examined for mycotic or trichophytic infections, after which a patch of warm vulcanised rubber was applied to the right leg. If there was no reaction similar tests were carried out with material from the patient's own shoes and with various chemical accelerators used in the rubber trade. Of 102 patients with dermatitis of the feet, 11 (10%) were hypersensitive to rubber and the history was similar in many of these cases. One boy of 12, for example, had three attacks of dermatitis between 1938 and 1940, all of which were associated with the use of rubber shoes. The first attack had been treated as impetigo bullosa, caused by wearing plimsols and had disappeared in a fortnight; in the second attack he was treated for epidermophyton interdigitale, the trichophytin reaction at that time being strongly positive but the mycotic test negative; this also cleared in a fortnight, but three months later he had a more severe attack in which warm vulcanised rubber gave a strongly positive reaction. The eruption became worse when the dressings included mackintosh sheeting and improved as soon as this was replaced by oiled silk. Another patient, a woman of 51, had had irritation due to a pair of rubber garters twenty years before. She had replaced them with another pair—also rubber—and had had no further trouble until 5 weeks before she was examined, when she had bought a pair of cheap shoes, apparently made of leather, which caused much irritation of the feet. She had worn slippers for a time and the irritation had cleared up, but after she had spent a few hours in rubber boots, on washing day, a rash broke out; this failed to improve on treatment which included a rubber bandage, and she gave a strong reaction to hot vulcanised rubber. The soles of her new shoes turned out to be made of a mixture of leather and rubber—a favourite combination, it seems, among makers of cheap shoes. She subsequently had attacks when she wore shoes with rubber-impregnated insoles, goloshes over low-cut shoes, or shoes with an elastic gusset in the strap; she gave negative results to trychophyton and mycosis tests throughout. A third highly sensitive case developed an attack after standing for a few moments on a rubber mat after a bath. The cases appear to be commoner in summer, either because rubber footgear is then in more general use or because the traces of accelerator substance present in the rubber are released more freely at higher temperatures. Age and sex seem to make no difference to incidence; there is no evidence of family predisposition and as a rule no history of previous intolerance to rubber. In 8 of the 11 cases the attack appeared within 1–7 days of contact with the rubber; in only one patient was the interval as much as 3 weeks. Previous attacks, numerous in some cases, had occurred in 5 and had lasted 3–6 weeks. The toes were affected in all cases and in 5 there was also spread to the dorsal, and in 5 to the plantar, surface of the foot; the heel was affected in one case. An eruption also appeared on the hands in 6 cases, and one had generalised dermatitis. Thus the site of the lesions does not help in the differential diagnosis between rubber dermatitis, mycosis and epidermophytosis. In 7 of the 11 cases epidermophytosis had actually been diagnosed in previous attacks; the series does not indicate whether a preceding attack of epidermophytosis has any significance in the ætiology of rubber dermatitis, but the fact that mycotic tests were always and trichophyton tests mostly negative suggests that any connexion of the kind is unlikely. The incidence of rubber dermatitis is rare in comparison with the prevalence of rubber-soled footgear. But the patients affected, though few, are at a serious disadvantage, Marcussen thinks, partly because the diagnosis may be missed and the shoes causing the trouble may not be discarded, or the condition may be aggravated by the use of dressings containing rubber; and partly because prophylaxis is difficult in that women's shoes often have insoles containing rubber or held in position by rubber solution, and this may be overlooked or give rise to fresh attacks.

1. *Nordisk Med.* Sept. 6, 1941, p. 2507.

Mr. F. C. BARTLETT, F.R.S., professor of experimental psychology in the University of Cambridge, has been appointed a member of the Medical Research Council in succession to the late Prof. A. J. Clark.

The latest list of subscriptions to the Medical War Relief Fund brings the total amount contributed to over £35,000. Up to last September the distribution committee, of which Sir Hugh Lett is chairman, had paid out over £8000 (not £5000 as stated in THE LANCET of Nov. 22).

On Wednesday, Dec. 3, at 3 P.M., Sir David Munro, chief medical officer of the Ministry of Supply, will open a new medical department at the Longbridge works of the Austin Motor Company.

Special Articles

GENERAL MEDICAL COUNCIL

PRESIDENTIAL ADDRESS

OPENING on Tuesday the 154th session of the council Mr. H. L. EASON began with a word of regret that they could not sit in their own home as he had hoped in May. Once again therefore the council was availing itself of the generous hospitality of the Royal Institute of British Architects. He recalled the death since last session of Dr. Robert Briggs Wild, who represented Manchester University on the council 1922–27. The pharmacopœia committee had greatly benefited by his special knowledge and experience in pharmacology and therapeutics. Birmingham University had chosen its medical dean, Prof. L. G. Parsons, to fill the place vacated by Mr. Gamgee after fifteen years of varied service on the examination, executive and curriculum committees which had all profited by his terse and pointed observations. He also welcomed Dr. Thomas Fraser, lately president of the British Medical Association, elected in May to fill the place of Sir Norman Walker as direct representative for Scotland; and Prof. W. J. Wilson, medical dean of Queen's University, Belfast, as successor to Professor Lowry, now sitting on the council as a Crown nominee.

DEFENCE REGULATION 32B

Mr. Eason pointed out how this regulation debarred a doctor from temporary registration unless he could show that he was by law entitled to practise in some territory (or part of it) outside the United Kingdom to which the regulation had been applied. The Order in Council laid down that an applicant must show to the satisfaction of the council "that he holds a medical diploma or diplomas," and after consultation with representatives of the Home Office, Department of Health for Scotland, and British Medical Association, the regulation was amended, in September by adding after "holds" the words "or is duly qualified to obtain."

Effective applications for temporary registration could therefore now be made by persons who are by law entitled to practise in any place outside the British Islands, or, though not so entitled, hold (or have held) a medical diploma granted in any such place, or have passed examinations qualifying for it.

The new order, Mr. Eason remarked, also extends facilities for entry into civil practice by deletion of the words "not involving medical attendance on patients in their own homes." Applicants may now enter employment as assistants to practitioners whose names appear (other than temporarily) in any of the three sections of the Medical Register. These amendments, he said, will greatly relieve the responsibility in deciding difficult and doubtful cases, at the same time greatly increasing the responsibility for securing a guarantee that every applicant has the requisite knowledge and skill for the efficient practice of medicine, surgery and midwifery. Happily in these matters he had been able to rely upon the experience and information of the Conjoint Examining Board.

THE MEDICAL STUDENT'S SCIENTIFIC GROUNDING

The council will have noticed, said the President, the revival of interest both in the medical and in the lay press in the preliminary and early scientific education of the intending medical practitioner. No doubt the education committee would take these comments, criticisms, and suggestions into careful consideration, though the problems raised were carefully considered by the curriculum committee and the council before the 1936 resolutions on professional education which came into operation in November, 1938. Every medical student should, he said, have a thorough general education as well as the grounding in the basic sciences without which he cannot expect to profit by his later professional studies. The difficulty is that a complete general education would make a medical training so long as to be almost impracticable for the average student to spend the time or afford the cost. Some compromise between extreme views was therefore essential, although it might fail to satisfy those whose interest was concentrated upon a particular part of the curriculum.

FLOWERING OF A HEALTH SERVICE

HEALTH AND MEDICINE IN THE U.S.S.R.

Virchow, in the last century, said "Medicine is a social system." With this as his text Dr. A. W. Lipmann-Kessel, speaking at Aylesbury on Nov. 20, told of the origin, between 1917 and 1922, of the present health organisation of Russia. It began, he said, in a country devastated by war, revolution and counter-revolution; and the enemy at that time was the louse. Typhus was spreading so rapidly that by 1919 Lenin knew that either socialism must defeat the louse or the louse would defeat socialism. Dr. Semashko had been appointed as the first people's commissar of public health, and an account of the problems he had to face in those early years appeared in our columns in 1920.[1] The slogan chosen to launch the new health programme was this: "The health of the people is the task of the people themselves."

As early as 1918 the programme of the U.S.S.R. included a comprehensive series of health and sanitary measures. Mayakovsky and a group of young fellow poets left their verses to chalk health slogans on walls all over Russia. They set the pace during that early period of the health revolution, and their inspiration has carried over into these days. Dr. Lipmann-Kessel told how he had visited a mother and child welfare clinic in Moscow in recent years. Young medical women were taking the mothers round and explaining the anatomy and physiology of maternity to them with the aid of fine charts and models. In the midst of them was a group of Red Army soldiers receiving a lecture from a woman doctor on the same topic; paternal responsibility in Russia includes education in the hygiene of maternity. Respect for health is taught early. In the schools the children covet the post of health inspector. Two children in each class are appointed to this position and they not only make sure that the windows are open, and that each child brings a clean handkerchief to school, but have charge of a health register which they keep up to date. If any child stays away the children health inspectors visit his home, find out why, and carry a report back to the health officer at the school. There are also health conferences for children, and they are taught public health as part of their curriculum.

Every kind of medical treatment is given free of cost to every citizen who needs it. The basis of the service is not, as with us, the general practitioner working alone, but the health centre, staffed by a group of doctors, specialists and nurses and equipped with facilities for diagnosis. Health centres are placed in the factories, the suburbs, the collective farms or anywhere else where they are needed. In Moscow, at the Stalin motor works, which employs 35,000 workers, there is a network of first-aid posts, as well as six visiting centres which those with minor injuries and disabilities can attend for treatment. For those with more serious troubles there is the central polyclinic, staffed with 124 whole-time doctors and 18 dentists, who are responsible for the health of the workers. This accent on health is no polite fiction; in Russia promotion of doctors depends on the standard of health among workers in their charge, and on a falling level in the time lost at work. The graphs plotted to show progress are of health achieved, not of sickness overcome, and the polyclinic is responsible for the prevention, diagnosis and treatment of all disease within its area.

Between 1919 and 1923 the probability of sickness in Russia was high: most of the people were ill or likely to become ill. They were impoverished, famine stricken and disease ridden; and on this foundation of a sick population one of the greatest experiments in health services was built. It is meaningless, Dr. Lipmann-Kessel believes, to compare the number of hospital beds available in England with the number in Russia: per head of population we still have the lead in beds. But a more significant figure, he suggested, was the threefold increase of beds in Russia during the last ten years. In the same period the number of doctors has been nearly doubled. A Russian institution which we should do well to copy at once, he thought, was the night sanatorium. Between full incapacity and full capacity there is often a transition period when a man is not fit to do a whole

1. *Lancet*, 1920, **2**, 519.

day's work or a heavy job but when he would be the better for doing something. In the U.S.S.R. the man returning to work is examined at the factory clinic and allocated to a suitable job, for a suitable number of hours daily. After work he goes to the night sanatorium where he is under the care of doctors and nurses and is given the food he needs. Tests to estimate his response to return to work can be carried out, and his work is graded to meet his recovery.

The casualty service in Moscow is also fully organised. An emergency hospital serves an entire region, taking in every urgent case. The telephone calls reporting cases are taken by a highly skilled member of the medical staff who, on the strength of what he is told, decides whether to send the emergency ambulance, which is express, or one of the ordinary ambulances. If the express ambulance is sent, its moment of departure is recorded by the breaking of a light beam and its return is checked in the same way. Every week the times taken on calls are analysed and any unexplained delay is investigated. The young doctor who goes out with the ambulance is expected to make a quick diagnosis and to record it in a book. His diagnoses are checked against the hospital findings, and the man who perpetually makes wild diagnoses can thus be detected.

Dr. Lipmann-Kessel reminded his hearers of the service Soviet research into the storage of blood had been to us in this war, and recalled Russian work on blood taken from the cadaver. Russians have also perfected a technique of blood-transfusion for use in the front line; and their use of aerial transport for the wounded saved many lives in the Finnish campaign. He described an ambulance tank which can be taken on to the battlefield and manœuvred to cover the wounded man, who is then lifted in through a sliding panel in the floor. Thus the wounded can be retrieved without danger to stretcher-bearers.

Pavlov spoke of Russia as the only country in the world where research could be carried on unfettered by economic ties. This principle is carried into medical education; medical students are chosen only from among the best students; they receive free education and free books, and are paid during training like any other worker in the Soviet.

SCOTLAND

EDUCATION OF CRIPPLES

Dr. G. J. I. Linklater, school medical officer for Edinburgh, speaking at a recent meeting of the Cripples Welfare Association said that the surgeon could now work wonders with the crippled child, but after he had done his best the child was put into the world with other children who had had full facilities for education. The crippled child had been losing each year and education must be provided to bring him up to as high a scholastic standard as possible. Muscles which had been altered by surgery must also be re-educated, and children who were unable to follow ordinary pursuits and exercises must receive psychological education. Unless the inferiority complex were counteracted it would follow the child into life, with the further development of the timid person afraid to compete with his peers, the recessive person who would not establish social contacts, or the unlovable person who tried to overcome his limitations by over-compensation. Dr. Linklater drew attention to an obstacle which arose in relation to occupational therapy, when people who had been trained were not accepted by trade-unions because they had not served an apprenticeship. Although they were competent workmen they had great difficulty in obtaining employment. The visiting teacher was a great stimulus to the children who learned to read, write and make contact with the outside world. They were taught to use their hands, and their attention was taken away from their disability. Unfortunately this had ceased with the war but he hoped it would begin again.

PART-TIME MISSIONARY

Dr. F. M. Graham, who died in Edinburgh on Nov. 17 at the age of 71, was for many years a medical missionary in India. He took the Scottish triple qualification in 1890, his F.R.C.S.E. in 1895, and the M.D. of Durham in 1906. For some time he acted as tutor in clinical surgery and clinical assistant in the medical outpatient department of the Edinburgh Royal Infirmary, and as physician to the Cowgate Dispensary. He was an examiner in anatomy to the Royal College of Surgeons of Edinburgh. At the end of last century he went to India where, working as a free lance, he helped the medical missionaries in the winter and in the hot weather practised in the hill stations. But his health was never robust and he was forced to return to this country. However he followed the same plan of working, practising in Britain during the summer and in the Church Medical Society's hospital in Old Cairo in the winter. During the last war he worked as a civilian doctor in hospitals in France and for his services was created chevalier of the Légion d'Honneur. Dr. Graham's wife died a few years ago.

In England Now

A Running Commentary by Peripatetic Correspondents

STRUCK down by a virulent organism which crept up on me unnoticed, I was dispatched to a certain Civil Defence Sick Bay. Surrounded by comfort and the best attention I made a quick recovery and soon reached the critical stage, by which I mean the stage when the patient begins to criticise his treatment. The only grouse I could raise was that I was aroused at a quarter to seven in the morning. As insomnia was a feature of the illness the point was an acute one. It was only slight consolation to recall that in previous experiences of general and Service hospitals and nursing-homes the hour of wakening had been still earlier. Discussions with the sister produced the familiar arguments that everything had to be cleaned up before the doctor came, and unless an early start was made the work would never be done; moreover, it was the traditional hospital practice. I remained stonily unconvinced. As a physician it matters little to me whether a hospital patient has had his face washed before I call or not. A rearrangement of organisation could ensure that the work could be completed if it was started later. It is unjustifiable to assume (as is often done) that a tradition is ipso facto good. Like many another I customarily go to bed between 12 and 1 and rise about 8. Surely the average patient, and more particularly the sufferer from insomnia, does not derive any special benefit from such a drastic change of habit which puts out the lights at 9 o'clock and rouses him at 5—or even earlier. I have always held the view that patients were more important than physicians in the hospital, although such an opinion may seem heterodox in many quarters. I have even thought (though I would not dare to say so without the blessed cloak of anonymity) that the H.P. was really more important than the honorary. At least, he does the bulk of the work, although of course it is under direction. All this being so there does seem ground for re-examining the position, and as a final point a personal experience might be quoted. In several instances when my patients could not sleep, I have ordered that screens should be put round the bed and that he should not be disturbed in the morning under any circumstances until he awoke. This "eccentricity" of mine was singularly unpopular with the ward sister, but the results for the patient were so satisfactory that I insisted and persisted.

* * *

Those of us who formerly practised and must still live and support our families in the morally devastated areas of London once known as "good residential neighbourhoods" cannot but be grateful to the Ministry of Labour and National Service for employing us usefully on its medical boards and paying us for our work; but we wish sometimes that we could have a little friendly talk with the minister about the way his ministry orders its affairs and ours. Some matters are so curiously ordained. The most curious is the wildly irregular incidence of boards. The vagaries of the weather, the whims of women and the arrhythmia of auricular fibrillation are nothing to it. There was a time last year when for several weeks on end a weekly routine was actually maintained but those days are gone, we suppose for ever, and we now accept, like good children, three days' notice of next week's sessions—which may vary from six or eight to one or none—and are not unduly put about when, say, nine sessions actually allotted us are cancelled at a

stroke of the pen. So far as we can see all future board-work may cease at the end of any week with no notice at all, yet it often happens that two-thirds of our working time is taken up by it and we must regulate our other activities accordingly. We cannot, of course, make the wildest guess at our income for more than a week ahead and budgeting is out of the question. "C'est la guerre," we say sadly but in our hearts we fear it is only bureaucracy. We wonder whether a member of the Amalgamated Society of Bottle Washers, or of any profession less bred up to meekness and longsuffering than our own, could be used quite like this by an elected government and whether this is a fair sample of the promised golden age of state medical service; but either from citizenship or some less noble motive we keep our complaints to ourselves and come and go as bid. When peace comes no doubt the Ministry will go to the Heralds' College for a coat of arms. Meanwhile how would this do: *Azure, a weathercock revolvant or* with motto, *Varium et mutabile semper?*

Medical boards, 1939–41, as thousands of young men and hundreds of doctors now know, are run on the Ford or moving-belt system. The candidate and his document pass down a row of four cubicles, each containing a doctor who does his bit, records his observations and his opinion of the bit he has done and hands them on. Number four not only does his own bit but reviews the work of those before him, considers the candidate as a unit of manhood, records his notion of a suitable grade, and, with an "over to you, over," sends him across the room to the chairman. The chairman rapidly surveys all the recorded facts and opinions and the candidate himself, reaches a decision and records it. If he finds himself differing substantially from other members of the board he consults with them and endeavours, usually with success, to reach an agreed decision. He and the whole board work according to instructions which are in some matters extremely precise, in others quite indefinite. As to the bits, those who first allotted them seem to have had it in mind that the members of the board would be what are termed "physicians-and-surgeons" and should accordingly be treated each to a scrap of medicine and a scrap of surgery. How otherwise would the astonishing assortment of ears and hearing, urine and belly have fallen to number four? Experience has led to a more logical grouping of functions between the members and finality may not yet have been reached, but it has all along been true that only number four and the chairman have either the duty or the opportunity of considering their man as a whole.

When, therefore, the eager doctor starts out for two consecutive sessions of medical board widely different experiences may lie before him. He may spend the greater part of five hours in the rapid examination of samples of urine for albumin and sugar, relieved by intervals for the terse and vivid description of every variety of hair, complexion, eye, mole and scar. He may keep his joints supple by 30–60 performances of "up in the morning early" exercises vis-a-vis the same number of mildly astonished recruits. He may take histories, test vision and assess mentality against time, or he may make a rapid general medical survey and enjoy the sport of seeing if he can catch his colleagues out. It may occur to him that some of these occupations scarcely require for their efficient performance the discipline of the medical curriculum and the experience of practice, or, of course, he may find them a pleasant relief from more responsible work. On some days the number and quality of the candidates make the work easy for every member of the board; on others it is laborious for all, very laborious for some and quite impossible to get it done in anything like the allotted time. Regarding the matter more broadly it is hard to know whether this Ford method is in the circumstances the best way of doing the job. Three good clinicians, one being chairman, with an unqualified assistant to weigh, measure, test urine and record the police description, and with a proper allowance of time, could almost certainly do it better, especially if they were told how their assessments worked out when the men got into the Services. But they too would have to divide the examination of the man and they might not find it easy to devise an efficient and satisfying plan. The present method does assure for each recruit a reasonably complete examination, approximating to a prescribed standard, capable of rapid performance and as little dependent as may be on the personnel of the board, but those who do the work have almost no means of guessing whether their assessments do in fact conform to the needs of the Services. There is at present no liaison between chairmen or members of boards and commanding officers or medical officers of Service units and it is obvious that there ought to be.

From the point of view of the medical profession it is certainly worth noting that this is the manner in which the state in 1941 finds it natural to tackle a clinical problem. It does it by what it would call a team of doctors, of whom at least three are employed in work which makes minimal demands on clinical skill, judgment or experience—work far below the standard of which any good doctor is capable. The notion that the board is a team is, of course, an illusion. Three doctors round a table may form a team. Four doctors in a row of cubicles working against time with a chairman at a table noting their findings and making a final decision may constitute a good little machine for rapid examination but is not and cannot be a team.

What of the recruits and the clinical aspect of the work? Experience of the samples of the population seen in one corner of outer London over a period of eighteen months is obviously not enough for any large pronouncements, but it does amply justify the assertion that we have a large number of most admirable young men. There are days when almost without exception the candidates fall obviously into the first class, and one comely, upstanding, muscular young man after another passes smoothly down the board, cheerful, alert, manifestly keen to be passed fit and making the least of any defects he may have. These young men follow a great variety of trades, but the best, as might be expected, are those who work with eye and hand out of doors—dockers, lorry drivers, builders of various kinds, skilled artisans and their labourers. Clerks are far less uniform as specimens of good manhood but the best of them are excellent, surpassing sometimes even the manual labourer. No "C3" class of young man has passed under my eye, and I have seen no trace whatever of widespread malnutrition. It would be ludicrous to suggest that these almost perfect physical specimens whose only common blemish is some degree of neglected dental caries were not, or had not as children been, well and sufficiently fed. Among those in sedentary trades some, even under thirty, are fat and flabby and no doubt their diet is at least in part to blame, but the undersized and the thin, the clinically "ill-nourished," are conspicuously rare. Sometimes, however, the mysterious net which dips into the population, enmeshes its draft and pours it out before us, delivers the most astonishing assortment of what can only be called mixed duds, and on a bad day the collective impression can be most depressing. These bad patches seem to have nothing in common except that the men are probably over thirty and have something amiss. Bad sight, running ears, deafness, valvular lesions, chronic bronchitis, duodenal ulcers, malunited fractures, old poliomyelitis, deformities of the feet (congenital or acquired), varicose veins, epilepsy, parkinsonism, anxiety neurosis, mental defect—anything and everything that can unfit them for life and for military service they have and it is not clear why they all come at once. It is like one of those car journeys when at each succeeding cross-roads the lights turn red as you approach. No doubt some combination of occupation-group and age-group is the real answer, yet their occupations recorded on their papers seem varied enough. What is very clear, and somewhat alarming, is the startling difference between the round-twenties and the near-forties on the one hand and the realisation that some poor, outworn old man of thirty-nine is twelve years younger than the examining doctor, who feels, and hopes he looks, still young and vigorous. Life has used some of them very hard. Putting war aside, is the same fate in store for "the many men, so beautiful"—those young fitters, bricklayers and lorry-drivers' mates that we saw yesterday, or is the contrast a witness to one of the small waves of progress on the ebbing tide of our civilisation?

Sociology apart there is good exercise in rapid diagnosis to be had by those members of the board who are free to survey the man as a whole, and daily lessons in the curiosities and unsolved mysteries of medicine and in that

still neglected science, clinical physiology. What is the real explanation of that quiet mitral stenosis which we cheerfully dismiss as rheumatic, though no faintest history of rheumatism, chorea, scarlet fever or any illness whatever can be dragged from the victim even by leading questions? Why do holes in the ear-drums and mess in the middle ear, let alone solid plugs of wax in the auditory meatus, affect the hearing so little? What is the truth about the plantar arches? Why did anyone ever suggest that there is a normal systolic blood-pressure between 110 and 160 or a normal pulse-rate between 48 and 120, and why, when we are listening to the blood-pressure noises, is there sometimes a point when they cease (which we then call the diastolic pressure) and sometimes none (when we say nothing about it)? How very little cardiac efficiency is affected by valvular defects! And did you know that one leg was so often shorter than the other? Why do albuminuria and sometimes glycosuria come and go in such an extraordinary fashion, and why are quite athletic-looking young men unable to stretch out one foot without falling over? Does the expansion of the chest vary inversely with the excellence of the physique or is it self-consciousness?

In fact if you are lucky in your place on the board, and are not too violently pressed for time, the work has many compensations; but why, oh why, in the absence of Western Front battles or invasions can it not run steady for a fortnight on end?

* * *

I wonder if others have this form of fantasy. It might be termed "The Parliament of the Genes," and with me it sits when I am having a hot bath or early morning tea. It is a huge parliament, about 2000 members on each side, but is dominated by the front benches, the back-benchers being mostly mute. The Government are parsons, lawyers and farmers, while the maternal or opposition party are more commercial—shopkeepers, in trade or industry, a sailor or two. There is also a small and noisy independent party whom I suspect of being mutations. They have strange methods, this assembly; sometimes they talk in blank verse or rhyme, or rock like a Greek chorus; sometimes somebody says a line or two, and then they all sit for many baths and cups of tea and never say a word, just ruminate about it. The subjects they discuss are rather vague and diffuse—for instance, for the last twenty years or so they have been arguing on and off whether it is better for a boy to have natural history hobbies or, as most modern children prefer, mechanical ones, and this often broadens out into Agriculture *v.* Industry. An excerpt from Hansard might run like this.

The P.M. (a clerical figure with a white stock, in a Gregorian chant): Are not the works of the Lord greater than those of Armstrong-Whitworth, white mice than Meccano? Moreover, if wheels do your work, the best that is in you will not be developed by muscle and sinew.

A very old Opposition back-bencher: We heard that old story before, when arboreal man from a cleft in a stick first threw a stone at a tiger, or again in a later debate on the first bow and arrow. Yet, see where they got us!

P.M. (continuing): The man in machines is half drowned by the grime and the greed of his calling; his lights and fertility wilt in the stench of their rapid explosions.

Independent member: Are mice the most scentless of beasts and pigs without their aroma?

The Opposition break into a chorus: This is a mechanistic age and he who would get on must mechanistic be, And on mechanics must his mind be set. That is the quickest way to L.s.d., And to Debrett.

Independent member: The limitations of your L.s.d. are 1 wife, 1 house and 3 square meals per d., Children to taste: The surplus is pure waste.

P.M.: The happiness that comes from natural things is greater far . . .

Leader of the Opposition: Is happiness our goal? Like cows and cabbages, should man too seek content and rest from searching . . .?

A sailor sitting next to him: Searching the surface of this earth of ours, searching its inner core, its outer skies, with all five senses, banded, making more, to scour the firmament that yonder lies beyond this speck of planetary dust. . . .

Independent member: Come off it, Jack, we've heard that speech before—you gave it at the last Rotarian lunch.

The debate continues—and probably will till I die.

Parliament

ON THE FLOOR OF THE HOUSE

MEDICUS M.P.

THE list of contents on the outer cover of Hansard for Nov. 19 begins, as usual, with Questions, then goes on to Mr. Speaker's Golden Wedding: Congratulatory Tributes and ends with King's Speech (Fourth Day): Agriculture. Nevertheless, in rising to congratulate the Speaker the Prime Minister apologised for committing "an irregularity." No speaker of the House as far back as 1653 has ever reached his golden wedding while in office. And before 1653, Mr. Churchill pointed out, occupants of the chair "held their tenure for shorter and more precarious periods." The Prime Minister spoke of the affection of the House for the Speaker and his family, of their belief in his impartiality and of his kindliness and courtesy to members of all parties, and gave notice of a presentation to be made by a delegation of members headed by the Father of the House, Mr. Lloyd George, later in the day. Mr. Pethick-Lawrence spoke for the Labour M.P.s, Sir Percy Harris for the little Liberal group, Mr. Will Thorne as the oldest member in age, and Mr. Maxton as the leader of the smallest minority in the House. The best speech, almost the perfect speech in the old Parliamentary manner, was made by Mr. Maxton, himself a professed rebel. The Speaker's reply was equally gracious and ended as it was bound to do, for it is the sacrosanct formula in opening the day's business: "The Clerk will now proceed to read the Orders of the Day."

* * *

The forms of the House continue but the change in the content of discussion in the House is very great indeed. Some of this takes place outside the House, in public statements by ministers and others, as it always did. Mr. Maisky for Soviet Russia, and Mr. Eden for the British Commonwealth, speak of close coöperation after the war—and a revolution in thought is accomplished which would have been inconceivable as practical politics up to a few months ago. Our coöperation with the United States, involving the surrender of cherished colonial rights in the West Indies, Central America and elsewhere had, even before the Atlantic Charter, opened up an unknown new road into the future. The days when Mr. Chamberlain could refer to Czecho-Slovakia as being "far off" are difficult to understand in days when the road from Burma to China is an objective of urgent consideration to the Government sitting in London.

But while conceptions are bigger than in the past and new horizons have opened, many of the old conceptions of government and preconceptions of the position of this country vis-à-vis others remain. The debate on colonial affairs on Nov. 20 showed this very clearly. It was opened by Mr. Noel Baker in a speech reminiscent of the days of 1919 when, as he said, "we were drafting the Mandates" at the Paris peace conference. Sir Ronald Ross said that the suggestion that the mandatary system was a success "rather shook" him and called it "as good escapist literature as it is possible to find." Mr. Baker's speech was a great deal more than that, as it gave a big-scale survey of some of the main colonial problems, although Dr. Morgan said its optimism rather perturbed him. Dr. Morgan, however, came down to earth and said we should put the Colonial Office in the dock. The indictment was severe and presented by a man who was brought up in the West Indies and knows the country. Failure to make constitutional changes of a democratic kind was important inasmuch as "these voteless, helpless people" (of Barbados) "cannot do anything themselves to change their conditions, because they have not the power to introduce any legislation to change their social or economic conditions." To do anything in the West Indies it was necessary to "throttle the private land monopoly" and get down to subsistence agriculture instead of concentrating on export agriculture.

Mr. George Hall, under-secretary for the Colonies, replying, uttered some platitudes about the need for "a far greater and more constructive interest in the social, economic and spiritual welfare of the colonial peoples," but failed to reply to the criticisms of Mr. Noel Baker,

Mr. Creech Jones and Dr. Morgan. Apparently, however, all is well as "that very distinguished Colonial servant, Lord Hailey" is presiding over a committee dealing with post-war colonial problems and so, presumably, the matter can be left in his hands. In which case Medicus is inclined to ask why is he not appointed colonial secretary instead of Lord Moyne?

This kind of "waffling" is no good to the House and does not interest the House—often only about 15 members were present during the debate. It is a grave weakness of the procedure that this should be possible, for the acid test of our belief in democracy will be our treatment of the Colonies and India—and that is another story.

FROM THE PRESS GALLERY

Our Colonial Responsibilities

IN the fifth day of the customary debate on the Address which was devoted to colonial affairs, much stress was laid on nutrition for, as Mr. J. A. E. DE ROTHSCHILD pointed out, vitamins and protein are equally necessary to black and white. Yet the malnutrition in parts of our Empire is still our greatest social folly. Mr. NOEL BAKER thought that we had made progress but in too many colonies there was still too much poverty, ignorance and preventable diseases. Exploitation of labour and of national resources were not only a social crime but also a social waste, and the Colonial Development and Welfare Act passed last year was our first effective step to check the waste. He was glad that the Colonial Office was planning for the future but there were urgent tasks lying to hand. The tsetse fly in Africa was one, and he suggested that we should coöperate at once with our Free French and Belgian allies, put up a sum of money from our Colonial Development Fund, and call in the health section of the League of Nations to organise research and make a start on practical work. Dr. H. B. MORGAN, who was brought up in the West Indies, raised a medical storm with his speech on conditions there. As a doctor, he said, he had seen too many people playing with bandages rather than dealing with the general conditions which underlie the sores, and he was pessimistic about any benevolent policy unless the people on the spot were given a chance, with whatever reservations were necessary, to have some say in the control of local affairs. He inveighed against a system which exported produce and imported heavily taxed food, while income-tax remained as low as 3*d*. to 2*s*. 6*d*. in the £. When he visited Barbados in 1939 the people were living in a black cesspool of disease—yaws, hookworm, syphilis, malaria and tuberculosis. The Rockefeller Medical Commission had found instances of hookworm in two or three parishes in Trinidad amounting to 80–90% of the agricultural population. The doctors in the West Indies are blamed for a medical policy with which they have nothing to do; instead of a unified medical service a doctor may not move from one parish to another, while some of the hospitals he had seen were a disgrace. Mr. CREECH JONES deplored the decision of the Colonial Office not to publish the reports of the colonies and said that our knowledge of their economic and social problems was hampered by a lack of vital statistics. He urged the need for an expansion of the social services department of the Colonial Office and said he would like to see a larger number of expert women with understanding and drive brought into it. He too stressed the need for the exhibition of greater vigour in the whole field of preventive medicine.

Mr. G. H. HALL, parliamentary secretary for the colonies, said that at the beginning of the war we were approaching a critical period in colonial history, and while the war had in one sense delayed the crisis, in another sense it had hastened it. The public conscience had been awakened to the need to take a more constructive interest in the social, economic and spiritual welfare of the colonial peoples who were now solidly behind us in our war effort. Our duty was to improve their lot, to develop their resources so as to raise their standard of life, and to enable them to take an ever-increasing responsibility in ordering their own affairs.

Agricultural Returns

On Nov. 19 Mr. R. S. HUDSON, the minister of agriculture, said that the output of cereals and straw this year will be at least as much again as in peace-time. The total area of crops resulting from the ploughing-up policy is about 45% above peace-time level. The yield from the ploughed-up land has been extremely satisfactory, and the latest estimates of the production of root crops promise a good harvest, well above the average for the last ten years. The production of potatoes will be just short of double the peace-time amount. Farmers have almost maintained our pre-war milk-supply. In 1938 they produced 1076 million gallons; this year we have 1053 million gallons. But liquid milk consumed has gone up by 200 million gallons.

QUESTION TIME

Health of the Nation

Dr. RUSSELL THOMAS asked the Minister of Health if he would examine the standard of nourishment, housing, physical training and working conditions of the nation, with a view to satisfying himself as to whether they were sufficient to promote adequate natural resistance to major and minor diseases.—Mr. E. BROWN replied: I do not think that general inquiries of this kind would usefully add to the continuous work of the Ministry. The health of the nation and the resistance of the people to disease has up to now been good—even I can say unexpectedly good in view of the added risks brought about by war-time conditions. I have no doubt this is largely due to the improvements in social conditions since the first World War and our efforts to maintain and add to them will be sustained.

Increase of Tuberculosis among Women

The latest available figures comparable with prewar years are those for 1940, when mortality among women from all forms of tuberculosis showed an increase of 11% over 1939. The highest incidence was in the age-group 20–24, where the increase was 18%. (Mr. BROWN replying to Mr. JAMES GRIFFITHS.)

Sale of Tuberculous Cows

Mr. C. T. CULVERWELL asked the Minister of Agriculture whether cattle tuberculin-tested by veterinary surgeons authorised by his ministry and found to be tuberculous were permitted to be sold as dairy cattle.—Mr. R. S. HUDSON replied: Yes. The sale of cows reacting to the tuberculin test is not, on that account, restricted, since reaction to the test does not in itself imply infection in the milk of a reactor.

Provision of School Meals

In answer to a question, Mr. R. A. BUTLER, president of the Board of Education, said that 24 local education authorities in Wales provide school meals and 3·9% of the children attending public elementary schools in those areas receive meals at school. There remain six areas—Radnorshire, Llanelly, Neath, Pembroke borough, Port Talbot and Pontypridd—in which no meals are yet being provided, but in all of them provision will shortly be ready or is under active discussion.

In answer to a further question, Mr. J. C. EDE, parliamentary secretary to the board, replied: On a single day in October midday dinners were provided for 21,729 children in the area of the West Riding of York authority. This figure is an increase of 59·9% over the number provided on a day in February last.

Wheatmeal Bread

Captain J. D. PROFUMO asked the parliamentary secretary to the Ministry of Food to what extent the original recommendations with regard to national wheatmeal bread, made by the Medical Research Council, were accepted; and on what grounds any of them were turned down.—Major G. LLOYD GEORGE replied: No recommendation made by the council with regard to national wheatmeal bread has been rejected. All have been acted upon with one exception. That is still being examined.

Captain PROFUMO: Is it not a fact that a standard as to the contents of the national wheatmeal loaf has never been laid down by the ministry—in regard to the amount of bran, &c.—and are not the public being misled into thinking they are eating something of great value?

Major LLOYD GEORGE: I am advised that a specification for the wheatmeal loaf has been laid down.

Captain PROFUMO: I believe the minister will find that that is not the case.

Infection in Labour Camps

Sir PERCY HURD asked the Minister of Health what action he had taken upon the report sent to him last month by the

Wiltshire public-health committee that the committee had been called upon to provide facilities for cases of vermin, scabies, venereal disease and advanced pulmonary tuberculosis among the imported labourers, especially from Ireland, for employment on Government contracts; and whether steps would be taken to ensure a strict medical examination before importation.—Mr. BROWN replied: Local consultations have taken place with all concerned regarding medical arrangements at the labour camps referred to. The county council's medical officer is giving valuable assistance and the necessary measures are in train. The point raised in the last part of the question is being considered in conjunction with the Ministry of Labour and National Service.

Sale of Horseflesh

In reply to a question, Major LLOYD GEORGE said that shops selling horseflesh for human consumption require to be licensed. Those selling horseflesh for consumption by animals do not at present require to be licensed but will be so required under the Meat Foodstuffs Order 1941 from a date to be announced.

Answering a question to the Minister of Health, Miss F. HORSBRUGH said that under the Food and Drugs Act 1938 the business of slaughtering animals, including horses, for human consumption, requires a licence granted by the local authority. Further, it is an offence not only to sell, but to have in possession for sale, or to consign to any person for that purpose, any food, including horseflesh, intended for but unfit for human consumption. Officers of local authorities have full powers to inspect such food and if necessary seize it with a view to condemnation.

Milk for the Elderly

Sir FRANK SANDERSON asked the parliamentary secretary to the Ministry of Food whether he was aware of the hardship which was being experienced by elderly people, say over 75 years of age, in not being able to secure adequate milk-supplies; and would he consider granting them an extra ration on a basis equivalent to the increase to be granted to young children.—Major LLOYD GEORGE replied: The comparative needs of different groups of people for liquid milk have been most carefully considered in conjunction with the food rationing (special diets) advisory committee of the Medical Research Council. In view of the supply position it has been possible to grant priority of supply only to those whose needs are greatest, and the ministry's expert advisers do not put elderly people within this category.

American Doctors

Sir ERNEST GRAHAM-LITTLE asked the Minister of Health to what services the medical practitioners, who were coming from the United States of America to take up work in this country, were being allotted: to what body their original selection and ultimate distribution was entrusted; what remuneration was offered to them; and what remission of the rate of income-tax imposed on British subjects was accorded to these American practitioners on the salaries paid to them in this country in respect of such service.—Mr. BROWN replied: The doctors referred to are being allotted either to the E.M.S. or to the R.A.M.C. according to their own choice. The selection of the doctors, so far as their professional qualifications are concerned, is carried out in America through the National Research Council, the American Medical Association and other professional bodies. Medical examinations and interviews are arranged in America on behalf of H.M. Government. Doctors who choose the E.M.S. are posted to hospitals by the director-general. The remuneration offered to them is the salary of medical officer in the E.M.S.—£550 a year plus board and lodging, or £100 a year in lieu thereof. I understand that this remuneration is subject to British income-tax in the ordinary way, but the amount of the tax is repaid to the doctors by my department, subject to the deduction of a sum equivalent to American income-tax at current rates. The distribution and remuneration of those doctors who elect to serve in the R.A.M.C. are matters for the Secretary of State for War.

National Medical Register

Mr. T. E. GROVES asked the Minister what efforts, apart from an announcement in the *British Medical Journal*, the Central Medical War Committee had made to maintain the national register of the medical profession up to date; and why had not other medical organisations and journals been approached to assist.—Mr. BROWN replied: I am informed that the Committee obtains information for the maintenance of the register from the local medical war committees, hospitals and various other sources, and that it avails itself of the assistance of such other medical organisations and channels of communication as seem most likely to be effective.

Home Guard Medical Officers

Mr. GROVES asked the Secretary of State for War whether he would raise the age of enlistment for Home Guard medical officers, since over-age doctors who were still in practice must necessarily be employed but could not benefit from classes of instruction, &c., unless they were actually enrolled in the Home Guard.—Captain H. D. R. MARGESSON replied: Cases of this kind are considered on their merits. In general the upper age-limit is not strictly enforced for practitioners wishing to enrol as medical officers in the Home Guard, provided that they are fit.

Mr. GROVES: Was it the considered policy of his department that zone medical advisers of the Home Guard should be appointed from among the whole-time servants of local authorities; and, if so, would he give an assurance that such officers had sufficient time for the duties which would be imposed upon them?—Captain MARGESSON: To avoid undue interference with the medical organisation of the locality, no medical practitioner may be enrolled in the Home Guard unless previous permission has been given by the local medical war committee, which is aware of the professional commitments of practitioners in its areas. This should ensure that Home Guard appointments are not inconsistent with the fulfilment of a practitioner's existing obligations.

Medical Board Delays

Sir IRVING ALBERY asked the minister if he was aware of the long delay which occurred in obtaining a medical board, and subsequent discharge, by men on home stations who were believed to be incapacitated for further service.—Captain MARGESSON replied: Steps have recently been taken to simplify and accelerate the procedure for bringing soldiers before a medical board and carrying out their discharge in order to prevent delays of this kind. Revised instructions were issued on Nov. 1.

Sir IRVING ALBERY: Will the minister consider whether it would not be better to send these men to the depots?—Captain MARGESSON: That is the effect of the new instruction.

Hospital Accommodation at Slough

Sir ERNEST GRAHAM-LITTLE asked the Minister of Health whether he was aware that there was no general hospital nearer to Slough than Windsor, where the accommodation was overtaxed; and whether, in view of the special circumstances, he would authorise the reception of civilian cases by the E.M.S. hospitals in Slough, where there was unused accommodation which the medical profession in Slough urgently needed. Mr. BROWN replied: I am aware that there has been considerable pressure on the beds at the general hospital at Windsor, and I arranged facilities some time ago for reducing the waiting-list by transfer of cases to emergency hospitals within reach of the area. It rests with the hospital to take full advantage of those arrangements The emergency hospital at Slough is in the county council's institution. While it is essential to keep a certain number of beds available there for air-raid casualties and other emergency cases, it has always been made clear that the council can and should admit in the normal way cases needing urgent hospital treatment who cannot get it elsewhere.

Spectacles for the Troops

Answering a question, Captain MARGESSON said that every soldier who requires spectacles is supplied with two pairs so that it should rarely happen that he is not in possession of at least one serviceable pair. There is now no delay in the initial supply of spectacles to soldiers, and adequate arrangements have also been made for the replacement of damaged or lost spectacles in any theatre of war where British troops are serving.

Medical Referee for Notts

Mr. BERNARD TAYLOR asked the Home Secretary on whose advice Dr. F. S. Airey, of Leicester, was appointed medical referee for Nottinghamshire; and was he aware that there was a decided objection by the Nottinghamshire miners attending Leicester.—Mr. HERBERT MORRISON replied: Following a decision to appoint a specialist medical referee for cases of dermatitis arising in this area, efforts were made in

consultation with the county-court judge, to obtain the services of a suitable dermatologist in Nottingham, but without success. The vacancy was then advertised. Dr. Airey was the only applicant, and on the recommendation of my medical advisers he was appointed. I appreciate that a medical referee at Nottingham would be more convenient for the Nottinghamshire miners, but there does not appear to be a suitable dermatologist there who would be willing to accept the appointment at the present time.

Fifth Valuation of Approved Societies

In reply to a question, Mr. BROWN stated that a short report by the Government Actuary, incorporating such statistics of the results of the fifth valuation of approved societies as it is practicable to furnish in present circumstances, will be available early next year.

Public Health

Damaged Food

IT was only comparatively late in the last war that attention was directed to the urgent need for adequate steps to prevent food spoilage and to conserve what was utilisable. At that time it was possible to visit many ports and find large stacks of tinned sweetened milk set aside as unsound, and often they were all of one brand. The history of that brand is interesting. It came from the United States and in their endeavour to supply the English market some plants were put into operation and run, not by experienced packers, but by people comparatively new to the trade. In this case the promoters were unfortunate, for the site selected for the new factory was a disused brewery. Since the commonest agent causing sweetened condensed milk to become "blown" is yeast fermentation, and since a brewery normally swarms with yeasts, it was not unnatural that a large proportion of each consignment became unsound. But it had its serious side—it was bad economy to use limited shipping space for food which was condemned as soon as it reached this country. It is important that we should not make similar mistakes in this war, when the problem of shipping space looms even larger. It is disquieting to read in the *Evening Standard* of Nov. 13 that the Southwark authority applied for the destruction of 38 cwt. of cooked pressed meat from Eire on the ground that it was unfit for human food, because it was infected. Mr. Bernard Campion, the magistrate, said this was the third lot of meat from Eire which he had been asked to condemn, while the medical officer of health, Dr. William Stott, mentioned that there were large quantities of this meat being imported. No precise bacteriological information is given as to the nature of the unsoundness, but the whole of this particular consignment is said to have gone putrid 24 hours after being taken out of cold store. Probably there was no evidence of specific contamination with food-poisoning bacilli, but inadequate care resulted in putrefaction. Apart, however, from bacteriological considerations it is obvious, particularly in these days, that practical measures must be applied to preserve our food, whether it is imported or whether it is produced and prepared in this country. The present system of centralised slaughter-houses was devised and operated from the point of view of distribution; the requirements of adequate supervision and inspection were secondary considerations. Those responsible for meat supervision were not consulted as to the suitability of these centralised slaughter-houses or even as to whether they were the best available in the area. In fact a number of them are most unsuitable, although improvements have been made. Being placed in one local area the whole of the burden of meat inspection is thrown on the food inspector (almost always the sanitary inspector) of often quite a small town, without regard either to his experience in meat inspection or the multiplicity of his other duties. No provision has been made for him to be assisted by the other food inspectors in the area served, although voluntary assistance has been given in some cases. Some premises are so unsatisfactory that adequate supervision is particularly difficult. There is evidence from various sources that the number of food-poisoning outbreaks has increased. All this, with revelations such as those at Southwark, suggests that the Government needs to pay more attention both to the control over food and to the application of all practicable measures to prevent food becoming unsound. If food is found unfit for human consumption, there is still the possibility that it could be heat-treated and made available for manufacturing purposes or fed to animals. These problems seem to fall within the purview of two ministries—of Health and of Food—and possibly they sometimes fall between the two. There is plenty of expert advice available if outside help is required. As an example of what can be done the following instance may be mentioned. A very large consignment of tinned herrings in tomato sauce was imported recently into this country and on inspection a small proportion of the tins were found "blown," while a higher percentage showed the slight unsoundness called in the trade "springers." The question of condemnation arose, but instead the local medical officer of health consulted the county M.O.H., who with the aid of the county laboratory was able to establish the soundness of all except the definitely blown tins. The advice given and taken was to keep the whole consignment for a month and after rejection of the definitely unfit to pass the rest, unless the holding disclosed a different state of affairs. In this way almost the whole of this large consignment was used without risk.

Tuberculosis in Lancashire

Dr. G. Lissant Cox offers a précis of the work of his department for 1940, but all the records are available for reference. In a county population estimated at 1,900,870 there were on the dispensary registers 7533 patients suffering from tuberculosis (4324 pulmonary, 3209 non-pulmonary), and of these 19·9% were children under 15. During the year 1394 new cases of pulmonary tuberculosis were reported, an increase of 105 over 1939, and 751 new cases of non-pulmonary tuberculosis, 39 less than in 1931. Among young women aged 15–35 there were 386 new notifications of pulmonary tuberculosis (336 in 1938 and 377 in 1939). 1064 persons died from tuberculosis during 1940, giving a rate of 0·55 per 1000 of the population, and this was an increase of 0·01% on the 5-year average.

The county has been able to maintain all its beds, the monthly average in occupation being 942. An increasing amount of thoracic surgery is being done and of the 4324 pulmonary patients 978 received some form of surgical treatment. During 1940 the tuberculosis officers have examined and X rayed 656 recruits referred to them by the civilian medical boards and the council have agreed that recruits for the women's auxiliary services may have the same facilities.

Infectious Disease in England and Wales

WEEK ENDED NOV. 15

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 1352; whooping-cough, 2066; diphtheria, 1043; paratyphoid, 30; typhoid, 9; measles (excluding rubella), 671; pneumonia (primary or influenzal), 997; puerperal pyrexia, 136; cerebrospinal fever, 104; poliomyelitis, 21; polio-encephalitis, 1; encephalitis lethargica, 5; dysentery, 204; ophthalmia neonatorum, 78. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on Nov. 12 was 1307, including scarlet fever, 181; diphtheria, 250; measles, 38; whooping-cough, 475; enteritis, 43; chicken-pox, 40; erysipelas, 24; mumps, 5; poliomyelitis, 8; dysentery, 25; cerebrospinal fever, 10; puerperal sepsis, 11; enteric fevers, 34; other diseases (non-infectious), 87; not yet diagnosed 76.

Deaths.—In 126 great towns there were no deaths from enteric fevers or scarlet fever, 2 (0) from measles, 8 (2) from whooping-cough, 43 (1) from diphtheria, 37 (3) from diarrhœa and enteritis under 2 years, and 38 (4) from influenza. The figures in parentheses are those for London itself.

There were 12 deaths from diphtheria at Liverpool, 4 at Birmingham, and 3 at Sheffield. Manchester reported 5 deaths from influenza.

The number of stillbirths notified during the week was 195 (corresponding to a rate of 38 per thousand total births), including 22 in London.

The M.B.E. has been awarded to Lieutenant G. D. Eccles, M.B., Home Guard (Dawlish), for "conspicuous gallantry in carrying out hazardous work in a very brave manner."

Letters to the Editor

HYPERTENSION

SIR,—The article by Dr. Richardson and Dr. Smart in your issue of Nov. 15 is of great interest in that it records two further examples of fall in blood-pressure following the removal of a diseased kidney. It would however be wrong not to challenge the assertion in their penultimate paragraph that "all cases of chronic hypertension should have a complete urological investigation." In accord with contemporary practice we may perhaps promote Hypertension to the rank of Captain of the Men of Death. It is an extremely grave, common and intractable disease and any clue as to a means of treatment requires careful examination. The recent work of experimental pathologists, beginning with Goldblatt and his collaborators and reaching a culmination in the recent work of Byrom and Wilson, at last throws some light on a situation of tragic obscurity. But if this work demonstrates that hypertension can be produced by reducing the renal circulation through one or both kidneys it in no way suggests that it is usually produced by a unilateral lesion. We know full well that in the vast majority of cases any demonstrable disease is bilateral and that in an even greater number nothing at all can be shown to be wrong with the kidneys during life.

I would submit that a complete urological investigation of such cases would be a waste of time and money for a horde of unfortunate patients calling for very different treatment. In point of fact each of the cases described in the article had localising signs from the very outset.

Middlesex Hospital, W.1. T. IZOD BENNETT.

COMPRESSED LIMB: RENAL FAILURE

SIR,—In conformity with modern thought—which shows little sign of regressing, of considering any other view—the renal failure following limb compression in bombed dwellings has been imputed to a "toxin" derived from the damaged part. A better, a more reasonable, a more helpful view is that the renal failure begins, advances and ends as the result of an "active congestion of the kidney" (Maitland, A. I. *Brit. med. J.* 1941, **1**, 570; *Lancet*, 1941, **2**, 446)—the cause of which, however, is arterial in origin. Induced by reflexes elicited during the burial period—the Lovén reflex, the skin response to cold, and reflexes arising from pain and fear—it is advanced by the transfusion given to combat shock. Indeed, so marked is the effect of tranfusion on the kidney in these cases that it almost seems that the "nephrotoxin" must exist in the blood or plasma administered to the patient. But on the one hand cases of shock, unassociated with limb compression, treated by transfusion, do not develop renal failure (Bywaters, E. G. L. and Beall, D. *Brit. med. J.* 1941, **1**, 432); on the other hand a case of limb compression treated by infusion to induce diuresis, shock being absent, resulted in anuria (Mayon-White, R. and Solandt, O. M. *Brit. med. J.* 1941, **1**, 434). It is thus clear how the transfused blood acts; it acts mechanically, increasing the mass of the circulating blood. The signs of shock disappear; but the arterial congestion of the kidney, diminished by the state of shock, is reinforced, the patient dying of renal failure.

How explain the shock? Recently I wrote that "the idea that shock is due to a toxin is a myth." Consider the evidence pointing the other way—it is colossal. But if shock, in these or in any other cases, is due to a "toxin," we must suppose that the blood transfused, since it cures the patient of shock, must contain an antitoxin to shock—which is absurd. The blood transfused, as we have seen, acts purely mechanically; it is thus not surprising to find that mechanical measures, other than that of increasing the blood mass, can combat shock—e.g., placing the patient in the Trendelenburg position. A patient of mine, of a different sort, with a falling blood-pressure was placed in the Trendelenburg position, by raising on chairs the legs at the bottom of the bed. In spite of that, the patient got worse; the systolic pressure in the brachial artery fell below 40 mm. Hg—the reading was confirmed by the resident medical officer who said "we must do something." We did do something: we raised the foot-end of the bed on lockers, which with a small rectal saline resulted in complete recovery.

Shock in these bombing cases is predisposed to by the dehydration, and precipitated by the œdema; watery parts of the blood exude into the compressed and damaged limb, increasing its volume but by so much diminishing the volume of the circulating blood. After admission, the placing of the patient in a warm bed and the application of heat, by attracting blood to the skin, facilitate the appearance of shock. Shock, which must diminish an arterial congestion of the kidneys, as a rule does not last long enough to relieve the renal block which the arterial congestion has caused; with a praiseworthy zeal it has been met with immediate transfusion—to the undoing of the patient. In the same way fluids have been pressed when they should have been restricted. Something seems wrong. It is, I think, that laboratory experiments, thought to mimic nature, are often a gross caricature; and that the life of man is regarded as a series of biochemical reactions rather than as a sequence of biophysical events.

Rugby. R. H. PARAMORE.

BLAST INJURY OF THE LUNGS

SIR,—Dr. Osborn states that no real pathological or clinical distinction has been shown to exist between cases of pulmonary concussion from (*a*) mechanical causes such as road accidents, (*b*) bomb explosions, and (*c*) depth charges. This last is outside our experience. Clinically, our cases did not resemble cases of mechanical injury. There was not the slightest risk of overlooking the lung damage, which Dr. Osborn says may easily happen in cases of mechanical injury. Even the milder cases showed symptoms and physical signs which no one with any experience of chest conditions could miss. In almost all Dr. Osborn's cases blast and mechanical injury appear to have been associated, whereas it is our contention that the effects of blast and mechanical injury should be studied separately at present until it can be shown that they are identical.

The translation of Dr. Osborn's term "predisposition" into the phrase that blast lesions are "best marked in the phrenico-costal sinus," may not have been a happy one, and we regret it if we have misinterpreted him. In our experience a phrenico-costal sinus pneumonia, separate from one involving the bulk of the lower lobe, developed only once (case 3, fig. II). In addition this man had lesions diffused through the whole of both lung fields. This patient had had severe abdominal blast. Only one other case with severe abdominal blast developed pneumonia (case 7), and this involved the whole lower lobe. Five other cases without abdominal symptoms developed pneumonia involving the whole lower lobe. In four severe cases, and in all the milder ones, there was no evidence of phrenico-costal pneumonia and no grounds were found for directing special attention to it.

J. N. O'REILLY.
London Chest Hospital, E.2. S. ROODHOUSE GLOYNE.

A STATE MEDICAL SERVICE

SIR,—Those who put forward schemes for the improvement of medical practice are performing useful work but must be prepared for criticism. Quite apart from the vested interests of medicine, from which quarter Dr. Thompson appears to expect opposition, it seems likely that many of his colleagues in the public-health service are hoping that he will reconsider the ideas he has put forward in your issue of Nov. 15 (p. 613). Although the framework of the scheme does not greatly differ from others which have already been put forward, it proposes to deal a death blow to the present preventive health services of the local authorities. Dr. Thompson's Utopia is to emerge from a national service of insurance practitioners who will take over the work of the maternity and child-welfare and school medical services which in his own words "would disappear." From the chief medical officer of a welfare authority this is indeed a surprising suggestion and it is difficult to believe that its implications have been realised.

Since the maternity and child-welfare movement began enormous strides have been made in the care of mothers and young children. The work done by the welfare councils in the past has been followed by a dramatic fall in the infant death-rate and later in the maternal mortality figures. But the supervision of infant feeding and child care generally demands a knowledge of pædia-

trics while the prenatal clinic is of little use if the doctor is not a competent obstetrician. These are specialist jobs, and while I fully appreciate the excellent work of N.H.I. practitioners it must be questioned whether they would be willing to take over the educative and preventive work in these subjects in addition to their clinical duties. In any case they would not have the time, and the urgent calls of the sick would have to take precedence over the routine examination of the presumably healthy.

No form of state service would be possible without the inclusion of the general practitioner, and it is for us all to ensure that the status and working conditions proposed will be suitable and calculated to maintain the high traditions of the profession. But in any national scheme it is hardly conceivable that the educational side of preventive medicine—the maternity and child-welfare and school medical services—should not form the basis of all medical work. The framework of these services now in existence is perfectly satisfactory; their efficiency depends on their degree of development and on the quality of the personnel. Some areas are still behind others but that is no reason why their services should not be improved. Surely the foxes with no tails might try to grow them instead of advising others to cut theirs off.

Welbeck Street, W.1. VIOLET RUSSELL.

LIGATION OF PATENT DUCTUS ARTERIOSUS

SIR,—I have read with interest Mr. Mulvany and Sir Maurice Cassidy's comments on our article. It remains clear, however, that (1) in the two cases reported by us the ductus arteriosus was patent and infected, (2) neither before, during or after operation was there any evidence of the presence of any other congenital cardiac defect, (3) the patients have remained in good health and without symptoms for over a year now, (4) no other treatment of infected endocarditis or arteritis has in my experience yielded two successive cures in two successive cases, and (5) the percentage of spontaneous cure is less than 1%.

I agree with Sir Maurice that it is yet to be seen whether ligation could be justified as a prophylactic measure, for even after ligation a local dimple must persist at the site of the tied ductus, and this might provide a nidus for future infection. But I do not agree that the fact that spontaneous remissions may occur is sufficient to justify us in withholding from a patient a proved therapeutic measure which may have risk attached to it. The risk of the measure must be balanced against the risk of non-intervention, and the chances of remission in infected congenital cardiac defect are very minute.

Queen Anne Street, W.1. GEOFFREY BOURNE.

WHEN TO TIE THE CORD

SIR,—Is there not a tendency to stray from essentials in the consideration of this matter? As far as I am aware, Nature made no provision for adventitious aid in arresting the circulation through the cord. This phenomenon occurs spontaneously, and it does not seem unreasonable to take the cessation of pulsation in the cord as the sign that the placental circulation has in fact been arrested. This arrest may actually be established before all pulsation ceases, as the only fact that we are entitled to assume from the presence of pulsation is that the vessels are patent between the heart and the point at which the pulsation is felt. This consideration does not, in my opinion, affect the main issue.

Accepting the evidence for oxygen lack being the prime stimulus to respiration in the newborn infant, is it too much to assume that this lack is brought about by normal physiological mechanisms, and should not depend on the arbitrary application of some external obstruction to the vessels of the cord? It is, after all, a commonplace of practical observation that in the vast majority of normal deliveries the child starts to breathe shortly after birth, and before any outside mechanical interference with the cord has been undertaken. It seems to me that as labour proceeds a time must come when the placenta is unable to adapt itself to the changed size and shape of the uterine placental site, consequent on the reduction in size of the uterus. This must lead to a progressive separation of the placenta that would be sufficient to initiate the requisite oxygen lack.

Dr. Chisholm has suggested that the newborn baby is in danger of bleeding into its own placenta and possibly from placental tears. Some light on these risks might be obtained from records of precipitate births involving spontaneous rupture of the cord and the consequent possibility of hæmorrhage from the main umbilical vessels. In any event it would seem that to stress the propelling action of the heart as the sole motive power in the placental circulation after birth is to neglect entirely the suction effect that must be exerted by the increase of negative pressure in the thorax that accompanies the child's first inspiratory effort. An immediate ligature of the cord, as advised by Dr. Chisholm, may well prevent this suction mechanism from coming into play, and for this reason and in view of the considerations outlined above I would end with a strong plea on behalf of those whose practice it is to defer such an operation until at least "the cord has ceased pulsating."

Baldock, Herts. J. H. MOYNIHAN.

IMMUNISATION AGAINST TETANUS

SIR,—In your last issue Dr. Evans makes a comparison between the antitoxic response following two inoculations of tetanus toxoid and that noted subsequent to a third injection administered 10 months after the original doses. It is noted that there is a rapid, and in many instances a profound, increase in antitoxic titre as a result of this further stimulus of the immunising mechanism. In consequence of this observation it is suggested that it might be worth the added administrative difficulties to give this third injection.

It may be of interest to note that some time prior to my relinquishing the direction of the pathological services of the Army five months ago an instruction was issued to the effect that a third injection of tetanus toxoid was to be given 12 months after the original inoculations. As, no doubt, you are aware active immunisation against tetanus by the two dose method was introduced as a routine procedure in 1938 in the British Army. Such information as we have at present lends colour to the view that it has had an influence on the prevention of tetanus amongst the battle casualties sustained in the Belgian campaign. It is probable that the third injection now given will so increase the antitoxic level that this protection will still further be enhanced.

The present heavy fighting in the Western Desert should yield some data relevant to this method of prophylaxis. Information on this subject will, therefore, be awaited with interest.

Walton-on-Thames. H. MARRIAN PERRY.

SIR,—In your opportune leading article of Nov. 22 you do not mention that simultaneous passive immunisation with antitoxin and active immunisation with tetanus toxoid is provided for in United States Army and Marine orders. The British Army gives two doses of toxoid six weeks apart. A wounded British soldier will at once receive one emergency dose of antitoxin. If his record then shows that he was previously immunised, nothing further will be done, but if he is not already actively immunised he will get, I understand, three weekly injections of antitoxin as at the end of the last war. The U.S. Army gives—not only to those who so opt, as in the British Army, but to all personnel—an "initial immunisation" of three doses of toxoid three weeks apart followed by a "stimulating dose" of 1 ml. at the end of the first year, or prior to departure for war, if the departure occurs more than six months after the first yearly dose (*War Medicine*, May 1941, p. 426). An "emergency stimulating immunisation" is given for battle wounds or secondary operations. Antitoxin is not used except for the treatment of clinical tetanus. If those who have not been previously immunised are wounded they receive a single dose of antitoxin and a dose of toxoid plus two further doses as in initial immunisation. The U.S. Army and the U.S. Marines bestow their affections where they will—one prefers the air-cooled airplane engine, the other the liquid-cooled. The Army uses toxoid, the Marines use the insoluble alum-precipitated tetanus toxoid, and give to all personnel two doses of alum-precipitated toxoid four weeks apart. A further 1 ml. is injected about a year later or in the event of a severe battle or non-battle wound or burn, or if a secondary operation becomes necessary. Antitoxin is used for the treatment of clinical tetanus, or for inade-

quately immunised men, to whom a dose of tetanus alum toxoid is given at the same time, and the second dose a month later. The American Army and Navy thus both aim at passive plus active immunity at the same time. The factors are not the same as those described in the *British Medical Journal* of Nov. 20 (p. 717) by a group of investigators studying the immunology of diphtheria. If antitoxin and toxoid are given at the same time, the toxoid cannot act much while the antitoxin is present. Until it is got rid of there is a dangerous interval; the individual is exposed to infection if in contact with a carrier before the toxoid can act and produce active immunity. But in tetanus the man is not exposed during this time to external infection.

In passing, I would guess that the excellent American *War Medicine* has not yet gained full currency here. Among other items, a recent number tells that the American fighting man will have his blood-group marked on his card, as in the Australasian Army.

X.

SCIENCE OR ART?

SIR,—In your issue of Nov. 15 Professor Plesch stated that "we have lost confidence in our intuitive abilities and do not use or rely on our five senses sufficiently; this is regrettable because medicine must always remain an art to which science is only the servant." He then goes on to state that "our judgment must depend partly on imaginative intuition, and we can only pass on to the student the method of making the bricks from which he must build the diagnosis." I feel myself that we have rightly lost confidence in our intuitive abilities. Intuition is subjective and should be distrusted by the scientific mind. I disagree that medicine must always remain an art to which science is only the servant. It would be better both for the practitioners of medicine and those practised on that it should be primarily a science and secondarily an art. For some thousands of years medicine was an art; it was only when it tended to become a science that it began to command respect from intelligent minds. A teacher can pass on to his students a scientific attitude of mind which will ultimately benefit medicine and benefit his patients.

Gorseinon, Swansea. G. E. DONOVAN.

PARADOXICAL CEREBRAL EMBOLISM

SIR,—I am interested in the case recorded by Dr. Porter in your last issue but venture to dispute his diagnosis. It seems to me much more probable that the case was one of cerebral thrombophlebitis. I have published a comparable case (*Brain* 1937, **60**, 531) in which following thrombophlebitis in the left leg symptoms of increased intracranial pressure developed which were presumed to be due to thrombosis of the superior longitudinal sinus. Thrombophlebitis even if widespread is not necessarily accompanied by fever, nor is the lung often involved when thrombophlebitis arising in the lower part of the body subsequently affects the cerebral veins. Indeed in the puerperal cases pulmonary involvement appears to be the exception rather than the rule. The spread in such cases is probably by mural thrombophlebitis, along the intravertebral veins, as Purdon Martin has suggested (*Brit. med. J.* 1941, **2**, 537). The experimental work of Batson (*Ann. Surg.* 1940, **12**, 138) upon which this suggestion was based strengthens the belief which I have held for some time that many cases of hemiplegia which in the past have been attributed to arterial embolism, thrombosis or hæmorrhage, have in reality been due to cerebral thrombophlebitis. I would add that the rapidity of recovery in Dr. Porter's case is an additional argument in favour of the diagnosis of cerebral thrombophlebitis as opposed to cerebral embolism.

Oxford. C. P. SYMONDS.

LONDON HOSPITAL.—An award of the Hutchinson triennial prize will be made in 1944 for a dissertation on the investigation and treatment of sciatic pain. Candidates must be full students of the hospital, but not necessarily of the medical college, and they must have registered as students not more than ten years ago. Dissertations should be submitted to the secretary of the hospital medical council by Oct. 31, 1944.

Medical News

Royal Society

The King has approved the recommendations made by the council of this society to award a royal medal to Prof. E. L. Kennaway, F.R.S., for his investigations on production of cancer by synthetic substances.

The Copley medal has also been awarded to Sir Thomas Lewis, F.R.S., for his experimental researches, in the clinic and the laboratory, on the heart and the circulation and their disorders; and the Davy medal to Dr. H. D. Dakin, F.R.S., for his work as a pioneer in biochemical research and especially because of his fundamental contributions to the study of intermediate metabolisms.

Royal Society of Medicine

There will be a general meeting of the fellows of this society on Tuesday, Dec. 2, at 3.30 P.M. On Dec. 3, at 2.45 P.M.; at the section of history of medicine, Mr. Charles Elcock, F.R.I.B.A., will read a paper on hospital building—past, present and future. At 2.30 P.M., on the same day, at the section of surgery, Dr. E. G. L. Bywaters and Mr. Ronald Belsey will open a discussion on the effects on the kidney of trauma to parts other than the urinary tract including crush syndrome. The section of laryngology will meet at 10.30 A.M., on Dec. 5, to discuss the effects of flying on the nose and ear. The opening papers will be read by Wing-Commander J. F. Simpson, Group-Captain E. D. D. Dickson, Squadron-Leader D. B. Fry, Squadron-Leader J. E. McGibbon and Squadron-Leader R. H. Winfield. At 2.30 P.M., on the same day, Dr. Z. Mennell and Dr. Ronald Jarman will open a discussion at the section of anæsthetics on the present position of ether.

Health Films in America

The American Film Center, 45, Rockefeller Plaza, New York, has opened a section on films in health education and medicine, to which the Rockefeller foundation has promised a three-year grant. Dr. Adolf Nichtenhauser, who is in charge of the section, has been working on educational cinematography for many years and before joining the centre he was on the staff of the National Tuberculosis Association and the New York Tuberculosis and Health Association. The new section will be a clearing-house and information centre on the use and production of medical films for laymen and doctors. It will from time to time publish lists of recommended films, and it will develop a production programme with other agencies.

General Practitioners of West Ham

The practitioners of West Ham met on Nov. 19, to discuss the necessity for united and sustained action to meet the requirements of general practitioners as a body, in view of possible alterations in medical practice due to changing economic conditions. Dr. Robert Poots was in the chair and 83 doctors were present. Dr. Poots discussed the raising of the income limit for N.H.I.; the medical care of dependants of members of the Forces; the inadequacy of the recent addition to the N.H.I. capitation fee; the fact that less than 5% of the population earned more than £500 per annum; the effect of increasing income-tax burdens on the patient; and how these factors must influence the future of medical practice.

Dr. Philip Inwald, of Islington, told the meeting what had been done in his district and in the City area in organising the practitioners. Dr. H. C. Boyde welcomed the awakening professional interest in social and economic problems affecting medical practice. The B.M.A. had suggested it was desirable to form discussion and study groups, to plan future medical progress. Dr. M. J. Murphy thought extension and modification of the existing system might give a possible solution. Other speakers stressed the need for organisation among general practitioners, to make the wishes of the largest body of medical opinion in the country operative through the leading medical organisations. The following resolution, proposed by Dr. H. A. Hannon was carried unanimously, and practitioners from East Ham who were present associated themselves with it:

That a coördinating committee be elected by the general practitioners of West Ham, to link up with other practitioner coördinating committees throughout the country, to watch over the interests of general practitioners by every accepted means, to formulate their requirements and forward them to the Medical Planning Commission.

A committee of twelve practitioners was elected, instructed to get to work as soon as possible, and report progress at the next meeting, which will be held at an early date.

Hospital Saving Association

Despite war-time difficulties the number of contributors to this association on July 31, 1941, was almost 1,690,000 and the income for the year was £970,000. This year the association has paid the London hospitals 9*s.* for each inpatient day and 7*s.* 6*d.* for each outpatient, except when these figures exceeded the 1939 statistical cost. But fewer of the association's contributors have been ill, only 3% compared with 6% in 1938–39, while the outpatients had fallen from 20 to 11·2%.

Naval Honours

The D.S.C. has been awarded, for courage and resolution in operations in Mediterranean waters, to Temp. Surgeon Lieutenant E. R. L. Davies, M.R.C.S., R.N.V.R., H.M.S. *Manchester*, Temp. Surgeon Lieutenant C. J. Vaughan, M.B. Dubl., R.N.V.R., H.M.S. *Forster*, and Temp. Surgeon Lieutenant E. J. Yates, M.B. Manc., R.N.V.R., H.M.S. *Fearless*.

Harben Lectures

These lectures, which are delivered under the auspices of the Royal Institute of Public Health and Hygiene, will this year be held in Canada. On Dec. 1, 2, and 3, at 4 P.M., E. V. McCollum, Sc.D., professor of nutrition at Johns Hopkins University, will give them at the University of Toronto, and he has chosen as his subject nutritional science and public health.

Pituitary Extracts

The supplies of pituitary extract issued by the Ministry of Health for use in E.M.S. hospitals and first-aid posts carry the expiry date of Oct. 26, 1941. But the Medical Research Council have tested samples and report that where supplies have been kept under ordinary conditions at normal room temperature they may be used with safety for a further twelve months.

Anglo-Soviet Medical Committee

The Anglo-Soviet Medical Committee appeals to all who have any surgical instruments which they can spare to send them as soon as possible to the secretary of the Joint Committee for Soviet Aid, 171 St. Stephen's House, Cannon Row, Bridge Street, London, S.W.1. The need is urgent, for the manufacturers can supply only a limited number. Instruments which require to be re-plated or repaired will be accepted with gratitude and will be restored to good condition before being forwarded to the U.S.S.R.

Among the instruments wanted at once are:

Artery forceps of every description.
Record syringes and needles (international standard pattern).
Needles of all kinds (including hypodermic and spinal).
Scissors of every description.
Towel clips.
Dissecting forceps.
Aural forceps.
Bullet or swab forceps.
Aneurysm needles.
Surgical needle holders.
Intravenous, blood-transfusion,
Bone forceps.
Scalpels and amputation knives.
Plaster cutters.
Tracheotomy tubes.
Abdominal retractors.
Volkmann retractors.
Sterilisers and autoclaves.
Dental instruments.

Dusting Powder for Babies

The Board of Trade in consultation with the Ministry of Health have agreed to allow manufacturers of toilet preparations to supply dusting powder for babies under the name of "baby powder," without the addition of any other words. It must be sold as packed by the manufacturers and must not contain perfume, essential oil or colouring matter. It must be composed of the silicates of magnesia and alumina and may also contain a small proportion of boric acid. The powder will be distributed only to hospitals, medical practitioners and registered pharmacists and may be supplied only to people who really need it.

Communal Meals in Stirlingshire

On Nov. 14 Mr. Thomas Johnston, M.P., Secretary of State, opened the fourth feeding centre for the county at Stirling. Centres are already open at Falkirk, Kilsyth and Grangemouth, and almost 12,000 meals a week are served to school-children. The Stirling centre will be able to serve every day 3000 meals to children and 3000 meals to adults. In a short time Stirlingshire will have seven centres with a daily output of 10,400 meals for school-children and 9400 for adults. Hot meals will be distributed by insulated containers to all schools in the county and to selected centres where there is likely to be a demand, and the director of education for the county, who is in charge of these feeding arrangements, hopes to be able to supply the mining community in districts where no facilities for pit-head canteens exist.

Notes, Comments and Abstracts

NURSES CONSIDER THEIR PROFESSION

THE inaugural meeting of the Nursing Reconstruction Committee, under the chairmanship of Lord Horder, was held on Nov. 24 at the Royal College of Nursing. This body is composed half of delegates appointed by the college and representing different aspects of nursing, and half of delegates from kindred associations including the British Medical Association, the Society of Medical Officers of Health, the Nuffield Trust, King Edward's Hospital Fund for London (Nursing Recruitment Centre), Local Authorities' Nursing Services Joint Committee, the Medical Women's Federation, the British Federation of Business and Professional Women, the National Association of Administrators of Local Government Establishments, the Trades Union Congress, the Incorporated Association of Hospital Officers, the Hospital Matrons Association, the Queen's Institute of District Nursing and many others. The delegates are to consider ways and means of implementing the recommendations of the Athlone Committee and to recommend such further adjustments as the present situation and post-war reconstruction may demand. It is stimulating to see this extremely practical approach. It is easy—or relatively easy—to make recommendations for amending the nursing profession, since many defects in the terms of service are as widely known as they are of long standing. But to settle down to convert opinion into action is a different and worthier task. In welcoming the delegates Lord Horder reminded them that even in the short interval since 1939, when the interim report of the Athlone Committee appeared, important developments had occurred, among them the setting up of a division of nursing at the Ministry of Health; but there was much to be done. He pointed out that recruitment falls short of demand, education of nurses is cramped by the economic needs of the training institutions, prospects are too poor to attract women of ability, and conditions of service are not everywhere what they should be. The profession looks for the establishment of negotiating machinery on the lines of the Whitley Councils to bring such conditions into line. The new committee has a great work before it and we wish it well.

TUBERCULOSIS IN SOUTH AMERICA

ELEVEN of the Spanish-American countries took part in the fifth Pan-american Congress for tuberculosis held at Buenos Aires and Cordoba at the end of last year. In his presidential address Prof. G. Sayago said that these new countries had a common geographical, racial, economical and social background, and the statistics submitted to the congress showed that at any rate in their rural districts they were faced with common problems in the control of tuberculosis. In the larger cities of South America the problems connected with the disease were more comparable to those of the older nations. In the towns the incidence of the disease is high and as rural districts become industrialised they are exposed to infection; its spread among children is disquieting. But the congress did not consider that heredity was an important factor and infection by the placenta was rare. Non-pulmonary tuberculosis does not show the same clinical picture as in Europe, for surprisingly often it is associated with active or incipient pulmonary infections. These patients should be treated in special sections of the hospitals. The next congress will be held in Habana in 1943 and the subjects for discussion will include the value of BCG vaccination, initial stages of tuberculous infections; and the treatment of pulmonary cavities.

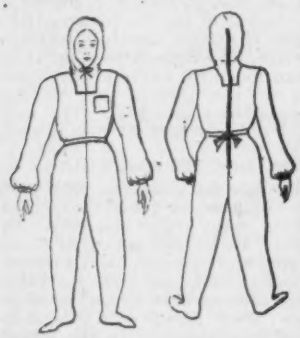
At the congress it was emphasised that the number of beds available in South America was insufficient for the number of tuberculous patients. To implement her share of the campaign against the disease the Argentine Government has set up a national committee, working under the department of health, which will coördinate the work of sanatoriums and laboratories receiving grants from the government, and establish new sanatoriums in rural districts in the interior. According to official figures there are only 5000 beds available in the republic and these can accommodate only a third of the patients, but the results achieved so far have been

good, and in Buenos Aires the death-rate from tuberculosis has fallen from 3·14 per thousand in 1938 to 2·79 in 1929.

The miraculous remedy against tuberculosis has once more been discovered. This time by Jesus Pueyo, a Spanish medical student. For a time he did research work in the laboratory of microbiology in Buenos Aires and he claims to have discovered a new vaccine, which was announced in the lay press in a sensational manner. The minister of the interior urged him to demonstrate its preparation at the National Institute of Bacteriology, but Pueyo made conditions which were unacceptable to the scientists. The faculty of medicine also tried to examine the vaccine, but this also came to nothing as Pueyo refuses to permit animal experiments and insists on being allowed to try his vaccine on human beings. The use of the vaccine has therefore been forbidden in Argentina and Pueyo has been fined for its unauthorised distribution.

TO DEFEAT THE TYPHUS-BEARING LOUSE

THE Ministry of Health (memo 252/Med.) puts us on our guard against the possible arrival of louse-borne typhus in this country, in company with refugees, prisoners of war and returning travellers. The body-louse and the head-louse are both probable vectors. Diagnosis depends on the sudden onset, high temperature, the appearance on the 4th or 5th day of a rash which spares the face, and a torpid or maniacal mental state. The Weil-Felix reaction can be obtained by the end of the first week and sometimes earlier. A strong reaction in a dilution of 1 in 80 or 1 in 100, obtained by a naked-eye reading, may be taken as positive, and during the later stages of the disease the titre rises to 1 in 1000 or even higher. At the other end of the scale, any increase in the agglutinating power of the serum, established by examinations at 2-day intervals, is significant even at a titre of 1 in 50. A vaccine against infection is available but its value in the field has not been tried. It is to be used at present only by those working on typhus teams and is to be given in three doses of 1 c.cm. at weekly intervals. If typhus does reach this country it is most liable to break out in crowded areas. Several of the large cities have been asked to organise typhus teams, each of which is to include the medical officer, 4 nurses, 1 ambulance driver, 1 ambulance attendant and 1 or more sanitary inspectors and trained disinfectors. The team should be duplicated so that absentees can be replaced.



All team members are to be provided with protective clothing consisting of a one-piece garment with a hood fastening down the back, preferably with a Zipper. A tape runs round the face aperture of the hood and ties under the chin, and tapes and elastic draw the sleeves closely round the wrists. Gum-boots and long fabric gloves are also to be worn, and masks if desired. Protective clothing is absolutely necessary for members of the team, since any of them may come into contact with typhus-infected lice. During removal to hospital the patient should be enveloped in a large sheet, and should travel in a vehicle which is easy to free from lice. The staff engaged in admitting the patient to hospital are particularly exposed to danger, and the greatest care of all should be taken during this time. The patient must be admitted to a special bathroom, stripped, deloused and clad in hospital clothing before being taken to a ward set aside for the purpose. Delousing must include not only complete disinfestation of the patient's clothing but careful delousing of his person, close cutting of the hair, shaving where necessary and careful bathing. He must be thoroughly soaped all over and cleansed in such a way that all lice are destroyed. In the hospital a room must be provided where the staff can change into protective clothing. After use the clothing must be left there for disinfection; the staff must pass next to a bath-room and finally to the room where their ordinary clothing is kept.

Officers with experience of typhus in the medical department of the Ministry of Health or in the L.C.C. will help to advise on diagnosis, and arrangements have been made for a mobile team from the American Red Cross—Harvard Field Hospital Unit—to give help in diagnosis and control in any part of England or Wales. Medical officers of health are advised to arrange for beds to be available in the larger isolation hospitals. The origin of infection must be carefully traced and all those who have been exposed to risk must be deloused and kept under observation for three weeks. Heavily infested people may have to be deloused a second time after an interval of ten days to ensure destruction of lice hatched from surviving eggs.

INCIDENTS AND GAS

HANDBOOKS to prepare the peaceable against the demands of war are the fashion just now; and a good thing too. No one can say "Why wasn't I told?" Three such warning messengers have lately been launched by Jordan and Sons. Mr. W. F. F. Shearcroft's 24-page booklet (War Gases: Learn and Live. 6*d*.) deserves a wide sale. It includes all the man in the street need know about gas, and by means of excellent little illustrations and apt descriptions paints as vivid a picture of a gas attack as you can hope to get for sixpence. Mr. T .E. Browne's 48 pages (Conduct of A.R.P. Incidents, 1*s*.) contain little that will be new to doctors, but the book may have uses for incident officers. So will the folded card (Duties of an Incident Officer, 1*d*.), by Mr. R. D. Wormald and Mr. J. M. Young, but this again does not aim at instructing the casualty services.

LIQUEMIN HEPARIN.—Roche Products Ltd. have changed this solution, which is now about 2½ times as strong as the old solution. The potency of the new solution will be stated in terms of Toronto units, viz., 1,000 T.U. per 1. c.cm., or 5,000 per 5 c.cm. phial.

Births, Marriages and Deaths

BIRTHS

COPE.—On Nov. 18, at Ongar, the wife of Major R. W. Cope, R.A.M.C.—a daughter.

KERR.—On Nov. 16, at Inverness, the wife of Dr. England Kerr, —a daughter.

SHAW.—On Nov. 21, at Berkhamsted, the wife of Dr. C. Carter Shaw —a son.

SMALLEY.—On Nov. 17, at York, the wife of Captain C. S. Smalley, R.A.M.C.—a son.

TEMPLETON.—On Nov. 22, at Leicester, the wife of Major William Templeton, R.A.M.C.—a son.

WILLIAMS.—On Nov. 15, at Oxford, to Joyce Beverley Williams, M.B., wife of Squadron-Leader Denis Williams, M.R.C.P., R.A.F.V.R.—a daughter.

MARRIAGES

SYMON—MOORE.—On Nov. 20, at Quainton, David Symon to Jocelyn Moore, F.R.C.S., R.A.M.C.

DEATHS

BLACK.—On Nov. 23, at South Croydon, Thomas Anthony Black, M.B. N.U.I.

CHIDELL.—On Nov. 18, at Hythe, Claude Churchill Chidell, M.B. Lond., first superintendent of Pinewood Sanatorium.

GOFF.—On Nov. 21, at Ventnor, Isle of Wight, Bruce Edward Goff, M.B. Glasg., late of Ovington Gardens, London.

LINNELL.—On Nov. 18, at Northampton, Alfred Linnell, M.R.C.S., aged 80 years.

PILKINGTON.—On Nov. 21, at Parkstone, Dorset, Frederick William Pilkington, M.R.C.S., D.P.M., aged 83.

SMYTH.—On Nov. 23, at Bognor Regis, Ernest Jackson Smyth, M.D. Lond.

SANDEMAN.—On Nov. 22, at Hertford, Muir Sandeman, M.B. Edin., aged 75.

WEST.—On Nov. 20, at Queen Mary's Hospital, Carshalton, Henry Owen West, M.D. Lond., F.R.C.P.

Appointments

CLINE, H. R., M.B. N.U.I., D.L.O.: surgeon to the ear, nose and throat department of the Mildmay Mission Hospital, London.

HODGES, W. V. A., L.D.S.: dental officer for Dorset.

MAWSON, EDNA E., M.D. Lpool: temp. asst. T.O. for Bristol and R.M.O. at Frenchay Park Sanatorium.

PHILLIPS, H. I., L.D.S.: dental officer for Dorset.

SHAW, DAVID, M.D. Lond., M.R.C.P.: temp. L.C.C. specialist at Sutton Emergency Hospital.

DAILY DEFENCE AGAINST DIRT AND DISEASE

★ For the layman in normal health, protection against infection through the skin is adequately safeguarded by the daily use of Wright's Coal Tar Soap. For over 70 years this well-known toilet soap with its antiseptic and antipruritic properties has been widely used by Doctors, Nurses and in hospitals and nursing homes. As a result largely of medical recommendation it becomes more widely used by the general public every year. The only soap containing 'liquor carbonis detergens' (Wright's) it is also highly soothing to delicate skins and can be safely used for infants as well as adults

WRIGHT'S COAL TAR SOAP PROTECTS WHILE IT CLEANSES

W 8

Useful & tempting in cases where biscuits may be taken –

McVITIE & PRICE'S

DIGESTIVE BISCUITS

MADE FROM DAIRY-FRESH BUTTER AND WHOLESOME BRITISH WHEAT

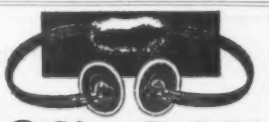
Specially designed for use in treatment of
PNEUMONIA, BRONCHITIS, PLEURISY
and similar affections of the Chest & Lungs

Made from the superfine grade of "Gamgee" tissue, made exclusively by Robinsons of Chesterfield and reputed as the finest dressing for use in Thermal treatment. Invented by, and prepared exactly according to the direction of the late Sampson Gamgee, F.R.S.E., Consulting Surgeon to the Queen's Hospital, Birmingham. Made in six sizes. Obtainable from all chemists.

"Gamgee Tissue" REGD TRADE MARK **PNEUMONIA JACKET**

Sole Proprietors & Manufacturers:
ROBINSON & SONS LTD., WHEAT BRIDGE MILLS, CHESTERFIELD
LONDON OFFICE: 229/231, HIGH HOLBORN, W.C.1

DOCTORS PRESCRIBE!



the famous
SALMON ODY
BALL AND SOCKET TRUSS
Most scientific and reliable yet devised. Perfect support, comfort, resiliency. Single 30/- & 42/- Double 50/- & 63/-
Most of our clients are sent to us by Doctors
Write for Booklet
SALMON ODY LTD.
TRUSS MAKERS FOR 130 YEARS
74, NEW OXFORD ST., LONDON, W.C.1
'Phone: MUSeum 2313

A POWERFUL ALLY

. . . in all cases where a simple and safe restorative is required either as a routine stimulant or in an emergency.

. . . in demonstrating to your guests that you have a high regard for their powers of discrimination and enjoyment.

OTARD'S BRANDY

FAMOUS SINCE 1795
The Only Brandy bottled actually at the Chateau de Cognac

"An After-Fitting Service to meet changing Aural Conditions"

OUR SERVICE TO DOCTORS AND THEIR DEAF PATIENTS!

IN prescribing "Ardente" for your deaf patients when an aid becomes necessary, you are safe because they can obtain service in most important towns throughout Great Britain—to meet any change in their aural condition. As an additional safety factor, each "Ardente" is covered by its maker's guarantee. There is a full range of "Ardente" types—electrical and non-electrical Bone-Conduction, Granule, Valve and Phantom types—which are individually suited, after Aurameter Test, to the needs of each case—no expense being incurred until hearing satisfactorily.

R. H. Dent
M. Inst. P.I.

Particulars gladly sent and Tests are made at Aurists, Doctors' patients, Hospital, or any of our addresses.
Medical Press Reports are interesting.
10 Medals, 5 Diplomas. Supplied under National Health Insurance.

ARDENTE LTD.— 309 OXFORD STREET, LONDON, W.1
(Between Oxford Circus and Bond St.) 'Phones: Mayfair 1308/1718/6947
Birmingham Bristol Cardiff Exeter Edinburgh Glasgow Leeds Leicester Manchester Newcastle

Modern Iron Therapy

Iron 'Jelloids' are an elegant and reliable means of administering the protocarbonate of iron. The preparation has none of the disadvantages of Pil. Blaud. The iron content remains fresh and unoxidised indefinitely, and injury to teeth is avoided.

The 'Jelloids' are highly effective in the treatment of achlorhydric anæmia and indeed in all the simple anæmias in which massive iron therapy is indicated.

Iron Jelloids

You are cordially invited to apply for samples for clinical test.
The Iron Jelloid Company, Ltd., King George's Avenue, Watford, Herts.

INSURANCE IN WAR-TIME

Write for the

WAR-TIME PROSPECTUS

of the

MEDICAL SICKNESS SOCIETY

Full particulars of all types of Sickness and Accident Insurance and Life Assurance will be sent on application to :—

THE MEDICAL SICKNESS, ANNUITY & LIFE ASSURANCE SOCIETY, LTD.

Registered Office :—"Highfield," Chesterton, Cirencester, Gloucester.

London Office [for New Business] :—"Salcombe," High Road, Bushey Heath, Herts

Telephone Number : Bushey Heath 1502

MICROSCOPES AND ACCESSORIES
WANTED HIGHEST PRICES GIVEN
Write, call or 'phone
DOLLONDS
35 BROMPTON ROAD, LONDON, S.W.3
Tel. : KENsington 2052

A. SHAW, Medical Transfer Agency
PREMIER BUILDINGS, 88, CHURCH ST., LIVERPOOL 1

War Emergency. All services being maintained. Sales of Practices and Partnerships negotiated. Reliable and efficient Assistants and Locums supplied. All classes of Insurance transacted.

Telephone : Royal 8116 & 7480 Telegrams : Organic, Liverpool

MICROSCOPES!
A selection of fine instruments for sale at reasonable prices
ALSO MICROSCOPES WANTED FOR CASH
WALLACE HEATON LIMITED
127, NEW BOND ST., LONDON Phone : MAYfair 7511

DO YOU KNOW ABOUT THIS SPECIAL BROOKS SERVICE ?

On receipt of your letter, telephone call or wire, an experienced man or woman truss fitter will be immediately sent to any urgent or special hernia case. Reasonable fees. We shall be glad to supply details of this service on request. Also, a fitting staff is always on duty at the addresses below.

BROOKS Appliance Co., Ltd.
(527W) 80, Chancery Lane, LONDON, W.C.2
(527W) Hilton Chambers, Hilton St., Stevenson Sq., Manchester, 1

BRITISH POSTGRADUATE MEDICAL SCHOOL
(UNIVERSITY OF LONDON)

WAR SURGERY OF THE EXTREMITIES
15th to 19th December, 1941

Monday, 15th Dec.	10 A.M.	General Principles of War Surgery of the Limbs.	Prof. G. Grey Turner, LL.D., D.Ch., M.S., F.R.C.S.
	11.15 A.M.	Administrative Problems in War Surgery.	Lt.-Col. T. B. Nicholls, M.B., Ch.B.
	2 P.M.	The Pathology of War Wounds of Extremities.	Mr. R. W. Raven, F.R.C.S.
Tuesday, 16th Dec.	10 A.M.	Wounds of the Extremities with or without Fractures.	Dr. J. Trueta.
	1.30 P.M.	Radiological Investigation of Wounds of the Extremities.	Dr. J. Duncan White, M.B., Ch.B., D.M.R.E.
	2.30 P.M.	Shock	Dr. J. McMichael, M.D., F.R.C.P., F.R.S.E.
Wednesday, 17th Dec.	10 A.M.	War Burns	Mr. J. B. Atkins, F.R.C.S.
	11.15 A.M.	Sepsis	Prof. J. Paterson Ross, F.R.C.S.
	1.30 P.M.	Tetanus	Dr. Leslie Cole, M.D., F.R.C.P.
	2.30 P.M.	Demonstration on the Cadaver of Useful Exposures.	Mr. A. K. Henry, F.R.C.S.
Thursday, 18th Dec.	10 A.M.	Wounds of Joints	Mr. V. Zachary Cope, M.S., F.R.C.S.
	11.15 A.M.	Amputations	Mr. Jenner Verrall, F.R.C.S.
	1.30 P.M.	Blood Transfusion ..	Dr. Janet Vaughan, D.M., F.R.C.P.
	2.30 P.M.	Injuries of Hands and Feet	Mr. A. K. Henry, F.R.C.S.
Friday, 19th Dec.	10 A.M.	Secondary Hæmorrhage ..	Prof. G. Grey Turner, LL.D., D.Ch., M.S., F.R.C.S.
	11.15 A.M.	Traumatic Aneurysm ..	Prof. G. Grey Turner, LL.D., D.Ch., M.S., F.R.C.S.
	2 P.M.	Gas Gangrene and other Anaerobic Infections.	Mr. G. T. Mullally, M.C., F.R.C.S.
	3 P.M.	Plaster Technique	Mr. A. Ruscoe Clarke, F.R.C.S.

The fee for the Course is one guinea. Officers of the Armed Forces wishing to attend these lectures without payment of the fee should apply through their respective Director-Generals. Applications for admission should be addressed to the DEAN, British Postgraduate Medical School, Ducane-road, W.12.

Royal London Ophthalmic Hospital
("MOORFIELDS").

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.

It is hoped to give a concentrated six weeks' course of lectures and classes in Ophthalmology suitable for candidates entering for the second part of the D.O.M.S. in February, 1942, commencing on 3rd January, 1942.

The course will include Bacteriology, Pathology, Operative Surgery, Fundus Conditions, Medical Ophthalmology, External Diseases, &c.

The fee for the course, together with clinical teaching at the Hospital, is twenty guineas.

For further particulars apply to the DEAN OF SECRETARY of the Medical School, Royal London Ophthalmic Hospital, City-road, E.C.1.

L. M. S. S. A.

FINAL EXAMINATION: SURGERY, December 8th, 1941, January 12th, February 9th, 1942; MEDICINE, December 15th, 1941, January 19th, February 16th, 1942; MIDWIFERY, December 16th, 1941, January 20th, February 17th, 1942.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

THE NURSES' ASSOCIATION
29, YORK STREET, BAKER STREET, LONDON, W.1

Mrs. MILLICENT HICKS, *Superintendent.* W. J. HICKS, *Secretary.*
Telephone: WELbeck 2728. Telegrams: "ASSISTIAMO, LONDON."

For MEDICAL, SURGICAL, and Male or Female

MENTAL NURSES

THE GROVE HOUSE,
CHURCH STRETTON, SHROPSHIRE.

Private Home for Ladies mentally ill. Voluntary and Temporary Patients received.

Medical Superintendent: Dr. J. A. McCLINTOCK.

THE MAGHULL HOMES FOR EPILEPTICS (Inc.)
MAGHULL (near LIVERPOOL)

FARMING and OPEN AIR OCCUPATION for PATIENTS

A few vacancies in 1st and 2nd Class Houses.

FEES: 1st Class (men only) from £3 per week upwards.
2nd Class (men and women) 32/- per week.

For further particulars apply: C. EDGAR GRISEWOOD, A.C.A. *Secretary,* 20, Exchange Street East, Liverpool, 2

TOR-NA-DEE SANATORIUM
Managing Director: DAVID LAWSON, M.D., F.R.S.E.

FOR THE TREATMENT OF PULMONARY TUBERCULOSIS AND ALLIED DISEASES

Medical Superintendent: R. Y. KEERS, M.D.(Edin.)

For prospectus apply to The Secretary, Tor-na-Dee, Murtle, Aberdeenshire Telephone: Cults 107

THE OLD MANOR, SALISBURY
Telephone: 3216 & 3217

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS

Extensive grounds. Detached Villas. Chapel. Garden Produce from own gardens. Terms very moderate.

CONVALESCENT HOME AT BOURNEMOUTH

standing in 12 acres of ornamental grounds, with separate villas, tennis courts, etc. Patients or Boarders may visit the Home by arrangement.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS *Telephone:* RODNEY 4242 (2 lines)

Completely detached Villas for mild cases. Voluntary Patients received. Twenty acres of grounds; own garden produce. Hard and grass tennis courts, putting greens, Recreation Hall with Badminton Court, and all indoor amusements. Occupational therapy, Calisthenics, Actino-therapy, prolonged immersion baths, shock and also modified insulin treatment. Chapel.

Senior Physician, Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff and visiting Consultants.
An Illustrated Prospectus giving fees, which are strictly moderate, may be obtained upon application to the Secretary.

The Convalescent Branch is HOVE VILLA, BRIGHTON, and is 200 ft. above sea-level.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug Addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *Telephone:* Ashton-in-Makerfield 7311. *Telegraphic Address:* Wootton, Ashton-in-Makerfield.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15

Telegrams: "Alleviated, London" **Telephone: Rodney 2641-2642**

A Private Mental Hospital, for Ladies and Gentlemen suffering from Nervous and Mental Illness, where the amenities of a comfortable home are combined with full investigation and every well-established modern treatment.

Terms from 3½ guineas weekly.

Illustrated Prospectus may be obtained from the Physician Superintendent.

CHEADLE ROYAL HOSPITAL, Cheadle, Cheshire.

This REGISTERED HOSPITAL, with a SEASIDE BRANCH at Colwyn Bay, N. Wales, is for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL AND NERVOUS DISEASES.

The Hospital is governed by a COMMITTEE, appointed by the TRUSTEES of the Manchester Royal Infirmary.

In addition to the Main Buildings there are separate villas. Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court for badminton. There are also wireless installations. Golf may be had within easy distance. Occupational Therapy.

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

The Hospital is nine miles from Manchester, 50 minutes by rail from Liverpool, and 3½ hours from London.

For terms and further particulars apply to the Medical Superintendent, who may be seen in Manchester BY APPOINTMENT. *Telephone: Gatley* 2231 (3 lines).

ST. ANDREW'S HOSPITAL FOR NERVOUS AND MENTAL DISORDERS

NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

PRESIDENT: THE MOST HON. THE MARQUESS OF EXETER, K.G., C.M.G., A.D.C.

MEDICAL SUPERINTENDENT: THOMAS TENNENT, M.D., F.R.C.P., D.P.H., D.P.M.

This Registered Hospital is situated in 130 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble; temporary patients, and certified patients of both sexes are received for treatment. Careful clinical, bio-chemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE

This is a Reception Hospital in detached grounds with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the complete investigation and treatment of Mental and Nervous Disorders by the most modern methods: insulin treatment is available for suitable cases. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-Ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High-frequency treatment. It also contains Laboratories for bio-chemical, bacteriological, and pathological research. Psychotherapeutic treatment is employed when indicated.

MOULTON PARK

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupational therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (TELEPHONE: No. 2356 and 2357 Northampton), who can be seen in London by appointment.

CRICHTON ROYAL, DUMFRIES FOR NERVOUS AND MENTAL DISORDERS

Cases of Alcoholism and Drug Addiction are admitted. **Every facility for individual treatment on the most modern lines. Special Department for Insulin Therapy.** Fully equipped Gymnasium, Golf Course, and Indoor Swimming Pool. Specially trained Occupational and Recreational Therapists.

Medical Certificates given anywhere in the British Isles are valid for admission of patients.

Physician Superintendent: P. K. McCOWAN, J.P., M.D., F.R.C.P., D.P.M., Barrister-at-Law. Telephone: Dumfries 1119.

COURT HALL, KENTON, near EXETER

FOR THE TREATMENT OF EIGHT LADIES, VOLUNTARY, TEMPORARY AND CERTIFIED PATIENTS

CLIFFDEN, TEIGNMOUTH

FOR EARLY AND CONVALESCENT CASES Recreational Therapies are held daily by skilled Leaders

The house stands high with spacious balconies and extensive views of the South Devon Coast. Beautiful garden. Own Dairy in 25 acres. Private road to beach

There is also a charming house, **EBWORTHY, MANATON, DARTMOOR,** situated in 20 acres, 1100 ft. up for bracing moorland air

Resident Physicians—BERTHA M. MULES, M.D., B.S. ANNIE S. MULES, M.R.C.S., L.R.C.P. Telephones—STARCROSS 259 and TEIGNMOUTH 299

THE COPPICE, NOTTINGHAM

HOSPITAL FOR MENTAL DISEASES

President: The Right Hon. LORD BELPER

REGISTERED HOSPITAL for Voluntary, Temporary, or Certified PRIVATE PATIENTS of UPPER and MIDDLE CLASSES. Own kitchen garden. Modern forms of treatment, including Electro-shock Therapy. Out-door games, cinema visits, motor drives arranged. Visiting Chaplain.

For terms, &c., apply to: Dr. G. M. WODDIS, Medical Superintendent. Telephone: 64117 Nottingham.

FENSTANTON at "FIVE DIAMONDS," Chalfont St. Giles, Bucks

A Private Home for the Care and Treatment of a limited number of LADIES with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Mansion with 12 acres of ground. (See *Medical Directory*, p. 2362.) Apply Resident Physician. Telephone: Little Chalfont 2046. Station: Chalfont and Latimer

Resident Junior Assistant Medical

OFFICER (B2) required by MIDDLESEX COUNTY COUNCIL for NORTH MIDDLESEX COUNTY HOSPITAL, Edmonton, N.18. Applications invited from registered medical practitioners, Men or Women, who have held resident appointments in general hospitals, and also from R practitioners who now hold A posts. Salary £250 per annum, plus cost-of-living bonus. Board, lodging, and laundry. Whole-time general medical and surgical duties such as Council may direct under supervision of Medical Superintendent. Appointment, subject to medical examination and one month's notice, is for six months with possibility of extension to twelve months (except in case of R practitioners). Post vacant January, 1942.

Applications, stating age, qualifications with dates, nationality, present post, and previous appointments, to the undersigned. No application forms provided. Relationship to any member or officer of the Council to be disclosed. Copies of not more than three recent testimonials. Canvassing, directly or indirectly, will disqualify. Closing date 6th December, 1941.

C. W. RADCLIFFE, "B3," Clerk of the County Council.

Guildhall, Westminster, S.W.1.

Albert Dock Hospital, E.16.

(SEAMEN'S HOSPITAL SOCIETY.)

Applications are invited from British registered medical practitioners for the appointment of RESIDENT HOUSE OFFICER (B1), to become vacant on the 1st January, 1942. Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply. Salary is at the rate of £350 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, experience, and details of previous appointments, with copies of three recent testimonials, should be sent to the undersigned marked "Albert Dock Hospital."

F. A. LYON, Secretary.

Seamen's Hospital Society, Greenwich, S.E.10.

The Princess Beatrice Hospital,

Earl's Court, S.W.5. (General Hospital—88 Beds.)

Applications are invited from Male and Female registered medical practitioners, including R practitioners within three months of qualification, for an appointment now vacant for: (*a*) HOUSE SURGEON (A) or (*b*) HOUSE PHYSICIAN (A). The appointment will be for a period of six months; for other than R practitioners it will be renewable for a further six months. Salary is at the rate of £130 per annum, with full residential and other usual emoluments.

Applications, stating age, qualifications with dates, nationality, post preferred, and accompanied by any available testimonials, should be sent to the undersigned not later than 12th December.

JOHN R. GRIFFITH, House Governor.

The South London Hospital for Women,

Clapham Common, S.W.4.

Applications are invited from medical Women for the following appointments: (1) RESIDENT MEDICAL OFFICER (B1). Applicants should have held house appointments. Salary £200 per annum, with full residential emoluments. (2) SURGICAL ASSISTANT to the EAR, NOSE, AND THROAT DEPARTMENT, to attend on Tuesday mornings weekly. Honorarium £25 per annum.

Applications, stating age, nationality, qualifications with dates, and accompanied by copies of three recent testimonials, must reach the SECRETARY at the Hospital by Saturday, 13th December.

Dreadnought Seamen's Hospital,
GREENWICH.

Applications are invited from British registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), to become vacant on 1st January, 1942. Applicants should have held house appointments and had surgical experience. Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply. Salary at the rate of £350 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, experience, and details of previous appointments, with copies of three recent testimonials, should be sent to the undersigned.

F. A. LYON, Secretary.

Seamen's Hospital Society, Greenwich, S.E.10.

Hospital for Consumption and Diseases
OF THE CHEST, Brompton, S.W.3.

Applications are invited for the appointment of Two RESIDENT SURGICAL OFFICERS (B1) from registered medical practitioners, including suitably qualified R practitioners holding B1 or B2 appointments. Applicants must have held a resident hospital appointment for not less than six months. The appointment is for six months commencing on 1st February, 1942. Salary at the rate of £150 per annum, with board and residence, and an additional £25 per annum for services in connexion with paying patients.

Applications are also invited for the following appointments from registered medical practitioners, Male or Female, including R practitioners who now hold A posts: ASSISTANT RESIDENT MEDICAL OFFICER (B2). Experience in artificial pneumothorax essential, and in ear, nose, and throat work desirable. Salary at the rate of £150 per annum, with board and residence. The appointment is for six months commencing on 1st February, 1942.

HOUSE PHYSICIANS (B2), for which there are three vacancies. The duties include work in the Out-patient Department as well as in the Wards, and the appointment is for six months commencing on the 1st February, 1942, with an honorarium of £50.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of one or more recent testimonials, should reach the undersigned not later than Saturday, 6th December, 1941.

Brompton, November, 1941. F. G. ROUVRAY, Secretary.

London County Council.

Applications invited from medical practitioners for undermentioned positions at various hospitals for infectious diseases. Married quarters not available.

TEMPORARY ASSISTANT MEDICAL OFFICERS (Class II) (B2). Salary £250 a year. Officers are eligible for promotion to Class I (B1) (temporary) after minimum period of six months' service. R practitioners who hold A posts may apply when appointment will be limited to six months, except by extension on promotion to B1 appointment.

TEMPORARY ASSISTANT MEDICAL OFFICER (Class I) (B1). Salary £350—£25—£425. Duties, Anæsthetist at St. Andrew's Hospital, Devons-road, Bow, E.3. Suitably qualified R practitioners holding B2 or B1 appointments invited to apply.

All above positions with board, lodging, and washing.

Application forms obtainable (stamped addressed foolscap envelope necessary) from MEDICAL OFFICER OF HEALTH, Staff Division 2, County Hall, S.E.1, returnable by 8th December, 1941.

Canvassing disqualifies.

Borough of Ealing.

TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified medical practitioners over forty-one years of age for the position of Temporary Assistant Medical Officer of Health. Other things being equal, preference will be given to applicants holding a Public Health qualification. The salary will be at the rate of £600 per annum, with a car allowance of £52 per annum. The officer appointed will be required to devote the whole of his time to the duties under the direction of the Medical Officer of Health, which will consist of work in connexion with the Civil Defence Services, including the visiting of public shelters and such public health work as may be required. The appointment will be subject to one month's notice on either side and will not confer any rights under the Superannuation Scheme. Canvassing will be a disqualification.

Copies of the application form and the terms of the appointment can be obtained from Dr. Thomas Orr, Medical Officer of Health, Town Hall, Ealing, W.5, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than the 8th December, 1941.

R. H. WANKLYN, Town Clerk.

Town Hall, Ealing, W.5.

Rotherham Hospital.
(Total 210 Beds.)

HOUSE PHYSICIAN (A).

Applications are invited from registered medical practitioners (Male) for the above appointment, to become vacant on the 1st January, 1942, including R practitioners within three months of qualification when appointment will be for a period of six months. Salary £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

T. H. FLETCHER, Secretary-Superintendent.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.

There are vacancies for Temporary HONORARY CLINICAL ASSISTANTS in Anæsthesia for which applications are invited from duly qualified and registered medical practitioners who are not liable for service in H.M. forces, i.e., by reason of age or medical category. The appointments will be for the period of the war, and successful candidates will be required to undertake anæsthetic duties on one or more half-days a week.

Applications, stating age, nationality, and qualifications, should be sent to the undersigned immediately.

W. S. RANDOLPH BISS, Secretary-Superintendent.

19th November, 1941.

Administrative County of Essex.

ESSEX COUNTY COUNCIL HOSPITAL, BROOMFIELD.

APPOINTMENT OF THIRD ASSISTANT MEDICAL OFFICER (B1).

The County Council of the Administrative County of Essex invite applications from registered medical practitioners for the appointment of Third Assistant Medical Officer at the Essex County Council Hospital, Broomfield, which contains 300 Beds for the treatment of male patients suffering from pulmonary or surgical tuberculosis.

Applicants should have held house appointments and have had experience in the treatment of tuberculosis. Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply. Salary £350, rising, subject to satisfactory service, by annual increments of £25 to £425 per annum, together with the usual indoor emoluments valued at £160 per annum.

The successful applicant will be required to pass a medical examination and to contribute to the appropriate Superannuation Fund. The appointment will be subject to the Council's Sick Pay Rules and Regulations, a copy of which will be forwarded upon application, and will be limited to four years.

Applications on the prescribed form, obtainable from the undersigned, should be addressed to me, in an envelope marked "Appointment of Third Assistant Medical Officer," and delivered at the County Hall, Chelmsford, not later than 9 A.M. on Wednesday, the 17th day of December, 1941.

JOHN E. LIGHTBURN, Clerk of the County Council.

County Hall, Chelmsford, 21st November, 1941.

Administrative County of Essex.

TEMPORARY ASSISTANT OPHTHALMIC SPECIALIST.

The County Council of the Administrative County of Essex invite applications for the above whole-time appointment from registered medical practitioners with special experience in all branches of Ophthalmology and preferably holding the Diploma in Ophthalmic Medicine and Surgery.

The appointment will be subject to certain special conditions of service relating to the appointment of temporary staff in lieu of staff mobilised for whole-time national service, copies of which will be forwarded on application. The salary attached to the appointment will be at the rate of £700 a year, and travelling expenses will be allowed.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the County Hall, Chelmsford, not later than 10 A.M. on Friday, the 12th December, 1941.

JOHN E. LIGHTBURN, Clerk of the County Council.

County Hall, Chelmsford, 24th November, 1941.

Staffordshire, Wolverhampton and
DUDLEY JOINT BOARD FOR TUBERCULOSIS.

PRESTWOOD SANATORIUM. (200 Beds.)

Applications are invited from registered medical practitioners, including R practitioners who hold A posts, for the post of JUNIOR ASSISTANT MEDICAL OFFICER (B2) (Male) at the above-named Sanatorium, which is approximately nine miles from Wolverhampton. The successful candidate will have opportunities of obtaining experience in the work of a Dispensary. The appointment will be for six months in the first instance, renewable for a further maximum period of six months, unless held by an R practitioner. Salary at the rate of £300 per annum, with board, residence, and laundry.

Forms of application may be obtained from the undersigned, and should be returned by first post on the 11th of December, 1941, together with copies of not more than three recent testimonials. H. L. UNDERWOOD, Clerk of the Joint Board.

County Buildings, Stafford, 24th November, 1941.

Gloucestershire County Council.

TEMPORARY ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Gloucestershire County Council invite applications for the appointment of a Temporary Assistant County Medical Officer of Health at a salary of £500 per annum. Applicants must be registered medical practitioners and should hold a Diploma in Public Health. The appointment will be subject to a satisfactory medical report by the Council's Medical Adviser.

Forms of application with particulars of the duties and conditions of appointment may be obtained from the County Medical Officer of Health, 18, Berkeley-street, Gloucester, to whom completed applications, with copies of three recent testimonials, should be sent not later than the 11th December. Canvassing, directly or indirectly, will disqualify.

RICHARD L. MOON, Clerk of the County Council.

HIS MAJESTY'S COLONIAL SERVICE

THE COLONIAL MEDICAL SERVICE

VACANCIES FOR MEDICAL OFFICERS

The maintenance of an efficient Colonial Medical Service constitutes a vital part of the national war effort and it is most important that the Service should be assured of an adequate supply of doctors.

The Secretary of State for the Colonies therefore invites applications from doctors possessing a medical qualification registrable in the United Kingdom who are British subjects and who are under thirty-five years of age.

Medical Officers are appointed in the first instance for general service. But there are ample opportunities for work in special branches of medicine and surgery, in public health and in medical research.

The normal salary scale is from £600 to between £1,000 and £1,120. There are large numbers of super-scale posts to which promotion is made on merit and which carry higher salaries.

Government quarters, in many cases free of rent, and first-class passages to and from the Colonies are provided, and an adequate pension scheme is in force.

Selected candidates are normally required to attend a course of instruction in Tropical Medicine and Hygiene either before proceeding overseas or during their first period of leave.

Further particulars, including the regulations governing admission to the Colonial Medical Service, may be obtained from the Director of Recruitment (Colonial Service), 2, Park-street, London, W.1.

Emergency Hospital Scheme.

HORTHAM EMERGENCY HOSPITAL, Near BRISTOL.

APPOINTMENT OF JUNIOR MEDICAL OFFICER (A).

Applications are invited from registered medical practitioners, Male or Female, for the above appointment. The salary is at the rate of £200 per annum, with free board and residence, or an allowance at the rate of £100 per annum in lieu of these emoluments if living in billets. Appointment will be temporary, subject to one month's notice on either side. R practitioners within three months of qualification may apply, when the appointment will be for a period of six months.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, accompanied by copies of three recent testimonials, should be sent to the MEDICAL SUPERINTENDENT, Hortham Colony, Almondsbury, near Bristol, not later than 13th December.

The appointment will be subject to the terms relating to the Emergency Hospital Scheme laid down by the Ministry of Health, and Corporation's conditions of service will not apply to the position.

Royal Buckinghamshire Hospital,

AYLESBURY. (150 Beds—3 Residents.)

Applications are invited from registered medical practitioners (Male and Female) for the post of HOUSE SURGEON (A), to commence on 1st January, 1942. Salary £120 per annum, with board, residence, and laundry. R practitioners within three months of qualification are eligible to apply when appointment will be for a period of six months. Opportunity is afforded to work with London Specialists.

Applications, stating age, qualifications with dates, nationality, together with copies of two recent testimonials, should be sent to the undersigned immediately.

F. G. DAWES, Secretary-Superintendent.

Chelmsford and Essex Hospital,

London-road, CHELMSFORD, ESSEX.
(235 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND RESIDENT ANÆSTHETIST (A), Male or Female. R practitioners within three months of qualification may apply, when appointment will be for a period of six months. Salary £150 per annum, plus board, lodging, and laundry.

Apply, with recent testimonials, to the undersigned immediately. R. G. MORRISH, House Governor and Secretary.

Royal Lancaster Infirmary,

LANCASTER. (261 Beds.)
(Five Resident Officers. Hospital recognised by the Royal College of Surgeons (England) for Two Senior Posts.)

Applications are invited from registered medical practitioners for the post of ORTHOPÆDIC AND CASUALTY HOUSE SURGEON (B2). R practitioners who now hold A posts may apply when appointment is for a period of six months, otherwise it may be extended. Candidates must have some previous hospital experience. Salary £175 per annum, with board, residence, and laundry.

Applications, stating age, qualifications with dates, nationality, and experience, and accompanied by copies of three recent testimonials, should be sent to the undersigned as soon as possible. FRANK A. MILNES, Superintendent-Secretary.

Oldham Royal Infirmary.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE PHYSICIAN (A), to become vacant on the 1st January, 1942, including R practitioners within three months of qualification when appointment will be for a period of six months. Salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than the 6th December, 1941.

F. W. BARNETT, General Superintendent and Secretary.

Salisbury General Infirmary.

(Voluntary Hospital—366 Beds.)

APPOINTMENT OF HOUSE SURGEON (A)

Applications are invited from registered medical practitioners, Male and Female, for the above appointment now vacant, including registered practitioners within three months of qualification, when appointment will be limited to six months. The salary is at the rate of £125 per annum with full residential emoluments.

Applications, stating age, qualifications with dates, nationality and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned as soon as possible. JOHN WILLIAMS, Secretary-Superintendent.

City of Portsmouth.

TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the temporary appointment of an Assistant Medical Officer of Health (Male). The duties will be concerned mainly with medical supervision of public air-raid shelters, but the officer appointed will be required to carry out such other duties connected with the Civil Defence Casualty Services or the general work of the Public Health Department as the Medical Officer of Health may direct. Previous experience of Civil Defence work and the possession of a Diploma in Public Health, though desirable, are not essential.

The salary will be at the rate of £600 per annum, and the appointment will be terminable, at any time, by one month's notice on either side.

Forms of application may be obtained from, and must be returned to, the Medical Officer of Health, Royal Beach Hotel, Portsmouth, not later than the 11th December, 1941, together with three copies of recent testimonials.

Canvassing, either directly or indirectly, will be deemed a disqualification. F. J. SPARKS, Town Clerk.

The Royal Beach Hotel, Portsmouth.

Surrey County Council.

FARNHAM COUNTY HOSPITAL. (260 Beds.)

Applications are invited for the temporary appointment, during the absence of the present holder on military service, of RESIDENT MEDICAL OFFICER (B1). R practitioners holding B1 or B2 appointments may apply.

The appointment will be available for approximately the duration of the war. Preference will be given to applicants who are capable of undertaking some of the routine and emergency surgery of the Hospital.

The salary scale is £350 per annum, rising by annual increments of £25 to £450 per annum, plus full residential emoluments valued at £125, and the commencing salary will be fixed at a point on this scale, according to the qualifications and experience of the successful candidate. Preference will be given to candidates who are not eligible to be called up for military service.

Applications, stating age and experience, and enclosing copies of not more than three testimonials, should be sent to the Medical Superintendent, Farnham County Hospital, Farnham, by Tuesday, 16th December, 1941.

DUDLEY AUCKLAND, Clerk of the Council.

County Hall, Kingston-on-Thames, 28th November, 1941.

The Royal Hospital, Sheffield.

APPOINTMENT OF A NON-RESIDENT PHYSIOLOGIST (MALE OR FEMALE) (B2).

Applications are invited for the above appointment now vacant. Medical qualifications desirable but not essential. Candidates must have had experience in medical laboratory work. Salary is at the rate of £300 per annum. R practitioners who now hold A posts may apply when appointment will be limited to six months.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

W. H. BOOTH, Superintendent.

The West Riding of Yorkshire Mental HOSPITALS BOARD.

STORTHES HALL MENTAL HOSPITAL.

PATHOLOGICAL TECHNICIAN.

Applications are invited for the position of Pathological Technician at the above Hospital. Salary £200 per annum, rising by annual increments of £15 to a maximum of £300 per annum. Applicants should have had a wide experience in all departments of routine clinical pathological and bacteriological work. The possession of a Certificate of the Pathological and Bacteriological Laboratory Assistants' Association is desirable. Applicants without previous mental hospital experience must be not more than thirty-five years of age. No emoluments are attached to the position. The position is subject to the terms of the Asylums Officers' Superannuation Act, 1909, under which deductions of 3 per cent. will be made from salary.

Applications, stating age, qualifications, and experience, together with the names and addresses of two persons to whom reference may be made, to reach the Medical Superintendent, Storthes Hall Mental Hospital, Kirkburton, near Huddersfield, not later than the 6th December, 1941.

G. L. BANNER, Clerk of the Board.

Board Offices, Wakefield, November, 1941.

Salford Royal Hospital.

Applications are invited from registered medical practitioners, Male and Female, including R practitioners within three months of qualification, for the following appointment: HOUSE SURGEON (A) to SPECIALS DEPARTMENT, which will become vacant on 19th January, 1942. Salary at the rate of £125 per annum, with full residential emoluments. The appointment is normally for six months.

Applications, on the prescribed form, should be sent at once to the undersigned, from whom further particulars and form of application are obtainable.

H. B. SHELSWELL, General Superintendent and Secretary.

22nd November, 1941.

Beckett Hospital and Dispensary, BARNSLEY.

Applications are invited from registered medical practitioners for the appointment of CASUALTY OFFICER (B1), to become vacant immediately. Applicants should have held house appointments and had surgical experience. Capability to perform emergency operations a recommendation. (Suitably qualified R practitioners holding B2 or B1 appointments are invited to apply.) Salary is at the rate of £300 per annum.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

ARTHUR L. BOURNE, Secretary-Superintendent.

25th November, 1941.

Bristol Eye Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of JUNIOR RESIDENT OPHTHALMIC HOUSE SURGEON (B2), vacant 1st February, 1942, including R practitioners who now hold A posts when appointment will be limited to six months. The salary of Junior House Surgeon is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, accompanied by three recent testimonials, should be sent to the undersigned as soon as possible.

D. M. BABER, Secretary and House Governor.

Bristol Royal Hospital. RADIO DIAGNOSTICIAN.

The services of a duly qualified whole-time Radio Diagnostician are temporarily required in the Radiological Department at the Bristol General Hospital. Salary £500 per annum, non-resident.

Applications, stating age and experience, accompanied by copies of testimonials, to be forwarded to the undersigned, from whom further particulars may be obtained.

THOMAS W. GREGG, F.C.C.S., Secretary.

Bristol General Hospital.

High Wycombe and District War MEMORIAL HOSPITAL. (93 Beds.)

Applications are invited from registered medical practitioners for the appointment of RESIDENT MEDICAL OFFICER (B2) at the above Hospital as from 1st January, 1942. Salary at the rate of £200 per annum, plus residence and board. R practitioners holding A posts may apply, when appointment will be limited to six months.

Applications marked "R.M.O.," stating age, qualifications, experience, and nationality, together with copies of three recent testimonials, to the undersigned. E. BARBER, Secretary.

Swansea General and Eye Hospital.

Applications are invited from registered medical practitioners (Male or Female) for the post of RESIDENT ANÆSTHETIST (B2), including R practitioners who now hold A posts when appointment will be limited to six months, otherwise it will be for a period of twelve months. The salary is at the rate of £150 per annum for the first six months and £200 per annum for the second six months, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be forwarded to the undersigned.

O. C. HOWELLS, Secretary-Superintendent.

24th November, 1941.

City of Sheffield.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE (WOMAN).

Applications are invited from duly qualified medical Women under forty years of age and of not less than three years' standing in the profession for the above post.

Candidates must have held a resident hospital post and have had recent special clinical experience in antenatal work, midwifery, and children's diseases.

Salary £500 per annum, rising by annual increments of £25 to £700 per annum.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applications, stating age, qualifications, and experience, with copies of three testimonials, to be sent on or before 9th December, 1941, to the MEDICAL OFFICER OF HEALTH, Town Hall, Sheffield.

The Royal Liverpool Children's HOSPITAL.

APPOINTMENT OF RESIDENT SURGICAL OFFICER (A).

Applications are invited from registered medical practitioners for the above appointment, now vacant, at the HESWALL (COUNTRY) BRANCH (260 Beds). Salary at the rate of £120 per annum. R practitioners within three months of qualification may apply when appointment will be for a period of six months

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials and the name of a referee, should be sent to the SECRETARY, Royal Liverpool Children's Hospital, Myrtle-street, Liverpool, 7, by Saturday, 6th December, 1941.

The Prince of Wales's Hospital, Greenbank-road, PLYMOUTH.

Applications are invited from registered medical practitioners for the appointment of HOUSE SURGEON (A), to become vacant on 1st January, 1942, including R practitioners within three months of qualification when appointment will be for a period of six months. Salary is at the rate of £132 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 13th December. ARTHUR R. CASH, General Superintendent.

Manchester Northern Hospital (General Hospital—113 Beds), Cheetham Hill-road, MANCHESTER, 8.

Applications are invited for the posts of RESIDENT HOUSE PHYSICIAN (A) and RESIDENT HOUSE SURGEON (A). Salary £100 per annum, with board and residence. The appointments are for six months from 21st January, 1942. R practitioners within three months of qualification may apply.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, should be sent to Mr. JAMES C. DANIELS, Secretary, 38, Barton-arcade, Manchester, 3, as soon as possible.

King Edward VII Hospital, Windsor. RESIDENT SURGICAL OFFICER.

Applications are invited for the above B1 post at a salary of £350 to £550, according to qualifications and experience. Suitably qualified R practitioners holding B2 or B1 posts may apply. The post is an E.M.S. appointment, and applicants possessing a Fellowship or senior surgical degree will be preferred.

Applications should be accompanied by three recent testimonials, addressed to the undersigned not later than 6th December, 1941. GEORGE WESTON, Secretary.

Taunton and Somerset Hospital, TAUNTON.

HOUSE PHYSICIAN and a HOUSE SURGEON (A).

Applications are invited from registered medical practitioners, Male and Female. R practitioners within three months of qualification may apply. Appointments will be for a period of six months. Salaries at rate of £150 per annum (resident).

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of testimonials, to—

F. J. J. STACEY, Secretary.

Royal Lancaster Infirmary, Lancaster. (261 Beds.)

(Five Resident Officers. Hospital recognised by the Royal College of Surgeons (England) for Two Senior Posts.)

HOUSE PHYSICIAN (A post) required immediately. Salary £130 per annum, with board, residence, and laundry. R practitioners within three months of qualification may apply. Appointment is for six months.

Applications, stating age, qualifications, experience, and nationality, together with copies of three recent testimonials, to be sent to the undersigned immediately.

FRANK A. MILNES, Superintendent-Secretary.

Northampton Education Committee. ASSISTANT SCHOOL DENTIST.

Applications are invited for the appointment of a fully qualified Dental Surgeon as Assistant School Dentist. Salary £450 per annum, plus war bonus (at present 6 per cent. on first £300 and 3 per cent. on remainder).

Further particulars and form of application may be obtained by forwarding a stamped addressed envelope to the undersigned, by whom applications must be received not later than 5th December, 1941. H. C. PERRIN, Secretary for Education.

Education Office, "Springfield," Cliftonville, Northampton.

City of Plymouth.

CITY GENERAL HOSPITAL. (320 Beds.)

Applications are invited from duly qualified and registered medical practitioners, Male and Female, for the post of ASSISTANT MEDICAL OFFICER (B2), including suitably qualified R practitioners in A posts when appointment will be limited to six months, otherwise it will be renewable for a further period of six months, terminable by one month's notice on either side. Salary will be at the rate of £300 per annum, plus a war bonus of £18 4s. annually, with full residential emoluments. All fees received by the officer must be refunded to the Council. Previous experience in a Maternity Hospital or in the maternity wards of a general hospital is essential, as the duties of the post are largely in the maternity department, in which is included a maternity home a few miles from the City. Further details of the post are obtainable from the Medical Superintendent of the City Hospital, Plymouth.

Forms of application may be obtained from the undersigned and should be forwarded, together with copies of not more than three recent testimonials, as soon as possible, and not later than the 12th December.

T. PEIRSON, Medical Officer of Health.

"Seven Trees," Plymouth.

Boroughs of Haslingden and Rawtenstall.

TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the position of Temporary Assistant Medical Officer of Health and School Medical Officer (Male or Female) for the Boroughs of Haslingden and Rawtenstall.

The person appointed will be required to work under the direction of the Medical Officer of Health and School Medical Officer.

The salary will be £600 per annum, plus a car allowance of £80 per annum. Candidates must be registered medical practitioners, and those possessing a recognised Diploma in Public Health will be given preference. The person appointed will not be allowed to engage in private practice. Canvassing, either directly or indirectly, will be regarded as a disqualification. The appointment may be terminated by one calendar month's written notice on either side.

Applications, stating present and previous appointments, age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned, endorsed "Assistant Medical Officer of Health," not later than Monday, the 8th December, 1941.

H. ISHERWOOD, Town Clerk.

Town Hall, Rawtenstall, Rossendale, Lancs,
21st November, 1941.

County Borough of St. Helens.

ASSISTANT MEDICAL OFFICER FOR A.R.P.

Applications are invited for the appointment of Assistant Medical Officer of Health (Male) for Air Raid Precautions duties in St. Helens. The officer appointed will be responsible under the Medical Officer of Health for the general organisation and administration of the Casualties Services of the Borough. The Medical Officer appointed may also occasionally be required to carry out other public health duties as the Medical Officer of Health may direct.

It is expected that the appointment, though temporary, will last during the war period, subject to one month's notice on either side. The salary will be at the rate of £600 per annum, plus a temporary war cost-of-living bonus at present valued £24 per annum. There is also a motor-car allowance at the rate of £50 per annum. The appointment is subject to the provisions of the Local Government Superannuation Act, 1937.

Forms of application may be obtained from the undersigned, to whom they should be returned, accompanied by copies of three recent testimonials, not later than 13th December, 1941.

FRANK HAUXWELL, Medical Officer of Health.

Town Hall, St. Helens, 20th November, 1941.

Huddersfield Royal Infirmary.

(321 Beds.)

Male HOUSE SURGEON (A) required to commence duty on 22nd December, 1941. R practitioners within three months of qualification may apply when appointment will be for a period of six months, otherwise is subject to renewal for a similar period of six months. Salary £150 per annum, with board, residence, and laundry. The Hospital is officially recognised for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

Applications, with copies of three recent testimonials, to be addressed to the undersigned.

H. J. JOHNSON, General Superintendent and Secretary.

County Borough of Dudley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from qualified medical practitioners for the post of Temporary Assistant Medical Officer of Health and Assistant School Medical Officer during the period of the present emergency.

Preference will be given to applicants who have had some definite experience of school medical work.

The person appointed must reside within the Borough, devote his whole time to the duties of the office, and will not be allowed to engage in private practice.

The appointment will be subject to three months' notice on either side and will also be subject to the provisions of the Council's Salaries and Grading Scheme so far as applicable to temporary staffs, and to the Resolutions of the Council in force from time to time with regard to temporary appointments.

The salary will be £500 per annum, rising by annual increments of £25 to a maximum of £700, in accordance with the Council's Conditions of Service. At present a war bonus is also payable.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer of Health," should reach the undersigned not later than 1st December, 1941.

GEO. C. V. CANT, Town Clerk.

The Council House, Dudley, 18th November, 1941.

Manchester Royal Infirmary.

The Board of Management of the Manchester Royal Infirmary invite applications from registered medical practitioners (Male and Female), including R practitioners within three months of qualification, for the following A appointments:—

Four HOUSE PHYSICIANS. Two for 8th and Two for 22nd January, 1942.

Nine HOUSE SURGEONS. Five for 8th and Four for 22nd January, 1942.

Two HOUSE SURGEONS to AURAL, GYNÆCOLOGICAL, OPHTHALMIC, and DERMATOLOGICAL DEPARTMENTS. One for 8th and One for 22nd January, 1942.

Two HOUSE SURGEONS to NEUROSURGICAL DEPARTMENT. One for 22nd and One for 31st January, 1942.

Two HOUSE SURGEONS to ORTHOPÆDIC DEPARTMENT. One for 8th and One for 22nd January, 1942.

The appointments are for six months, subject to the provisions of the bye-laws as to notice, &c. Salaries at the rate of £75 per annum, with board, residence, and allowance for laundry. Applicants may apply for more than one of the above posts, and if so must state the order of their preference.

Applications, stating age, qualifications, and nationality, to be received by the Chairman of the Medical Board not later than first post on Tuesday, 9th December, 1941.

By Order,

F. J. CABLE, General Superintendent and Secretary.

22nd November, 1941.

The Royal Gwent Hospital, Newport,

MON. (Total 341 Beds.)

Applications are invited from registered medical practitioners, Male or Female, for the appointment of HOUSE SURGEON to the FRACTURE AND ORTHOPÆDIC DEPARTMENT (B2) which is vacant. R practitioners who have held an A post are invited to apply for the appointment, when it will be limited to six months. Salary is at the rate of £200 per annum, with full residential emoluments. Applicants should be experienced in the treatment of fractures and/or orthopædics.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, accompanied by copies of three recent testimonials, should be sent to the undersigned at once.

ALAN RUDDLE, Secretary-Superintendent.

20th November, 1941.

The Chester Royal Infirmary.

(Normal capacity 225 Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of HOUSE SURGEON (A) to ORTHOPÆDIC DEPARTMENT, to take up duty forthwith, and GENERAL HOUSE SURGEON (A) to take up duty on 10th January, 1942, including R practitioners within three months of qualification. The appointment will be for a period of six months. The latter appointment is approved in connexion with the M.S. (London University) and the F.R.C.S. (England) examinations. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 18th December, 1941.

W. H. GRACE, M.D., F.R.C.P.,
Hon. Secretary, Medical Committee.

The Medical Defence Union

ESTABLISHED 1885

President: G. DE BEC TURTLE, M.D., M.R.C.P.

EDGware 1373

Annual Subscription £1 **MEMBERSHIP EXCEEDS 24,000** *Assets exceed £100,000*

No entrance fee payable by those joining within twelve months of registration

FULL PARTICULARS FROM THE SECRETARY, THE MEDICAL DEFENCE UNION LTD., "BONNINGTON," EDGWARE, MIDDLESEX

PUBLISHED by the PROPRIETORS, THE LANCET LIMITED, 7, Adam Street, Adelphi, in the County of London.
Editorial Office Address, 26, Temple Street, Aylesbury, Bucks (Aylesbury 315).
Printed by HAZELL, WATSON & VINEY, LTD., London and Aylesbury—Saturday, November 29, 1941.
PRINTED IN GREAT BRITAIN—Entered as Second Class at the New York, U.S.A., Office.

City of Birmingham.

ERDINGTON HOUSE.

TEMPORARY SENIOR ASSISTANT MEDICAL OFFICER (B1 APPOINTMENT).

The Public Assistance Committee invite applications for the above appointment from registered medical practitioners who are experienced in the diagnosis and treatment of mental diseases. The possession of the Diploma in Psychological Medicine or its equivalent will be deemed an advantage.

The Institution, which is approved for the purpose of the D.P.M., has accommodation for 1300 patients suffering from various types of mental and nervous diseases. The admission rate is 1500 per annum. A part of the Institution is functioning as an E.M.S. Hospital (200 Beds).

The salary will be at the rate of £500 per annum, with full residential emoluments at the rate of £250.

In close proximity to the Institution, a house is available for which rent is charged. The officer appointed has the option of residing in this house, in which case £250 per annum will be paid in lieu of his or her full residential emoluments.

The appointment will be subject to one month's notice on either side.

Any further particulars as to the Institution and/or duties may be obtained upon application to the Medical Officer, Dr. H. T. Kirkland, to whom applications, stating age, experience, and qualifications, accompanied by copies of two recent testimonials, should be forwarded to reach him not later than 10 A.M. on Monday, 1st December, 1941.

Canvassing in any form, oral or written, direct or indirect, will be regarded as a disqualification.

F. H. C. WILTSHIRE, Town Clerk.

Council House, Birmingham, 1, 17th November, 1941.

Manchester Ear Hospital,

GROSVENOR SQUARE, ALL SAINTS'. (30 Beds.)

Applications are invited from registered medical practitioners, Male and Female, including R practitioners within three months of qualification, for the appointments of SENIOR and JUNIOR RESIDENT HOUSE SURGEONS (A) at once. Salaries at the rate of—Senior House Surgeon £175 per annum, and Junior House Surgeon £150 per annum, both with full residential emoluments. In the case of R practitioners appointment will be for a period of six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to MR. REGINALD S. MILFORD, Honorary Secretary, Manchester Ear Hospital, c/o Mr. W. J. Ellam, 17, Brazennose-street, Manchester, 2.

County Borough of Burnley.

ASSISTANT MEDICAL OFFICER (FEMALE).

Applications are invited from duly qualified and registered medical practitioners (Female) for the appointment of Assistant Medical Officer of Health. The duties will be mainly those connected with Maternity and Child Welfare and the Council's Maternity Hospital.

The salary will be £600 per annum, rising, subject to satisfactory service, by £25 per annum to a maximum of £700 per annum, plus war bonus according to cost of living, less a deduction of £125 per annum for board, lodging, and laundry.

The successful candidate will be required to devote whole time to the service of the Council and to reside in the quarters provided.

The appointment will be subject to the provision of the Local Government Act, 1937, and the successful candidate will be required to pass a medical examination.

Further particulars of duties, conditions of appointment, and forms of application may be obtained from the Medical Officer of Health, 27, St. James's-street, Burnley, to whom applications, together with copies of three recent testimonials, should be sent not later than 9th December, 1941.

Canvassing, either directly or indirectly, will be a disqualification. ARCHIBALD GLEN, Town Clerk.

Town Hall, Burnley, 3rd November, 1941.

Royal South Hants and Southampton

HOSPITAL, SOUTHAMPTON. (255 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER (A), to become vacant on 1st January, 1942, including R practitioners within three months of qualification. The appointment will be for a period of six months. The salary is at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

E. L. WIRGMAN, House Governor.

Derbyshire Royal Infirmary, Derby.

(General Hospital—416 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of a RESIDENT ANÆSTHETIST (A), now vacant, including R practitioners within three months of qualification when appointment will be limited to six months, otherwise it will be for a period of twelve months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

ARTHUR TAYLOR, Superintendent and Secretary.

Newark General Hospital.

(66 Normal Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of RESIDENT HOUSE SURGEON (B2), vacant on or about 9th December. R practitioners holding A posts may apply when appointment will be limited to six months. Salary at the rate of £200 per annum, with full residential emoluments.

Also for appointment of JUNIOR HOUSE SURGEON (A), for which R practitioners within three months of qualification may apply. Vacant on or about 9th December. The appointment is for six months. Salary at the rate of £175 per annum, with full residential emoluments.

Applications, stating age, sex, nationality, qualifications with dates, and accompanied by copies of three recent testimonials, should be sent to the undersigned as soon as possible.

B. C. DION, Secretary-Superintendent.

Royal Hampshire County Hospital,

WINCHESTER. (461 Beds.)

Applications are invited from registered medical practitioners, including R practitioners, for the appointment of HOUSE SURGEON (B2). Preference will be given to candidates holding Diploma of F.R.C.S., with experience of ear, nose, and throat. The appointment will be for a period of six months. Salary is at the rate of £250 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

H. EWART MITCHELL, Superintendent and Secretary.

City of Birmingham.

JUNIOR RESIDENT MEDICAL OFFICERS (MALE OR FEMALE), "A" POSTS.

Applications are invited from registered medical practitioners, including R practitioners within three months of qualification when appointments will be for a period of six months, otherwise for not less than six months, for Junior Resident Medical Officers (Male or Female) at the BIRMINGHAM MUNICIPAL HOSPITALS for the treatment of medical and surgical cases. Salary at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, experience, and qualifications, with copies of three recent testimonials, should be forwarded to the MEDICAL OFFICER OF HEALTH, Council House, Congreve-street, Birmingham, 3, not later than Thursday, 4th December, 1941.

Herefordshire General Hospital,

HEREFORD. (210 Beds.)

Applications are invited from registered medical practitioners (Male), including R practitioners within three months of qualification, for the appointment of JUNIOR HOUSE SURGEON (A), including House Surgeon to Ear, Nose, and Throat Department. The appointment will be limited to six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned. T. W. UPTON, Secretary.

Medical Practitioners (registered),

of British birth, having experience of hospital and general practice, are invited to apply for a vacancy in the Medical Department of a drug manufacturing firm. Commencing remuneration not less than £900 per annum, subject to age and experience. The main duties of the post, which is full-time and permanent, are to give technical advice about the drugs that are sold.—Applications, without testimonials, should be sent to address No. 833, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Medical Officer.—Shipping

Organisation (Allied) invite applications for the position of Medical Officer in their Liverpool office. Duties will consist principally in general medical examinations of sick seamen who report themselves unfit for sea. Some experience in V.D. would be an advantage. Usual hours 9.30 A.M. to 4.30 P.M. No Saturday afternoon or Sunday work. Salary offered £1200–£1500.—Please address applications to ALSOP STEVENS & CO., Admiralty Dept., 7, Tithebarn-street, Liverpool.

Experienced Laboratory Technician,

skilled in bacteriological methods. Preparation of vaccines &c., seeks post. Free shortly. Excellent refs.—Box A.R. 934, Church Army, 55, Bryanston-street, W.1.

Vauxhall 10 1940 Saloon, Black.

One owner. Low mileage. First cheque £295 secures. No bids.—MUIR, 35, Norfolk-road, Thornton Heath, Surrey.

Lady offers large Furnished Bed-sitting

ROOM fitted H. and C., with use Bath and Kitchen; constituting almost self-contained Flat. First floor; delightful view Hurlingham. Trains, buses, three minutes. Suit professional lady. Phone: ABBey 7266, or after 7 P.M. REN. 2782.

Harley Street and District.—A number

of excellent CONSULTING ROOMS are available for full and part-time use at moderate rents. Particulars on application.—ELGOOD & Co., 1, Bentinck Street, Welbeck Street, W.1. Welbeck 8974.

pneumonia . .

The addition of EDWENIL to whatever other means you employ in treating pneumonia and influenza is bound favourably to influence the course of the illness. There will be a prompt reduction in temperature, indicative of the rapid mobilisation of the natural antibacterial defences. As a result, the duration of the illness and subsequent convalescence is greatly curtailed.

EDWENIL is immediately available, and being completely free from toxic or allergic elements, permits of early and aggressive treatment.

Supplement chemotherapy with EDWENIL.

EDWENIL

A deproteinised flocculus obtained by fractional extraction from a mixture of normal horse serum and an extract of beef muscle, suspended in 0·5 per cent. phenolised saline

Boxes of 3 and 12 × 2 cc. ampoules
Rubber-capped phials of 12½ cc., 25 cc., and 50 cc.

NON-TOXIC • NON-ALLERGIC • REACTION-FREE

Manufactured in the laboratories of

ENDOCRINES-SPICER LTD. — WATFORD — HERTS